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ARIZONA MEDICINE

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Menrium® treats the menopausal symptoms that bother him most.



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Division of Hoffmann-La Roche Inc
Nutley, New Jersey 07110

His wife has a lot of different
nopausal symptoms, but only a few
lly irritate *him*. Her hot flashes, her
tigo, her palpitations—that's *her*
blem. What really bothers him is
r nervousness, her irritability and
r excessive anxiety, often expressed
endless "book-shuffling, chain-
oking, reading-lamp" insomnia!
Menrium takes care of hot flashes,
tigo, palpitations in most
nopausal women. Menrium
vides the well-known antianxiety
ion of chlordiazepoxide (Librium®)
d water-soluble esterified estrogens.
therefore relieves more symptoms
an either component separately.
takes care of the vasomotor
nptoms as well as the emotional
nptoms. This means the symptoms
t bother his wife most. And the
nptoms that irritate him most.
So, to help them both get through
menopause, remember Menrium.



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Management of manifestations generally associated with the menopausal syndrome—anxiety and tension, vasomotor complaints and hormonal deficiency states.

Contraindications: Women with cancer of breast or genitalia, except inoperable cases, and those with known hypersensitivity to chlordiazepoxide and/or esterified estrogens.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Exclude other possible causes of menopausal syndrome manifestations, such as pregnancy. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) similar to those seen with barbiturates have been reported following discontinuance of chlordiazepoxide HCl. Potential benefits of use in pregnancy, lactation or women of childbearing age should be weighed against possible hazards to mother and child. Clinical data inadequate on safety in pregnancy.

Precautions: In elderly and debilitated patients, limit dosage to smallest effective amount of chlordiazepoxide (initially 10 mg or less per day) to preclude ataxia or oversedation; increase gradually as needed and tolerated. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects—particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in patients with impaired renal or hepatic function. Paradoxical reactions to chlordiazepoxide (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in the treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation very rarely reported in patients receiving Librium® (chlordiazepoxide) and oral anticoagulants.

Adverse Reactions: Untoward effects seen with either compound alone may occur with Menrium. With chlordiazepoxide, drowsiness, ataxia and confusion reported in some patients, particularly in the elderly and debilitated; while usually avoided by proper dosage adjustment, these are occasionally observed at lower dosage ranges. Also reported have been a few instances of syncope; isolated occurrences of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido, and occasional reports of blood dyscrasias, including agranulocytosis, jaundice and hepatic dysfunction. Periodic blood counts and liver function tests advisable during protracted treatment. Changes in EEG patterns (low-voltage fast activity) observed during and after chlordiazepoxide treatment.

With estrogens, headache, nausea and vomiting, anorexia, gastrointestinal discomfort, dysuria and urinary frequency, jitteriness, breast engorgement, formation of breast cysts, skin rashes and pruritus occasionally seen. Administration may also be associated with uterine bleeding and/or followed by withdrawal bleeding.

Usual Dosage: One tablet t.i.d. for 21 days, followed by one-week rest periods.

Menrium® T.I.D.

5 mg chlordiazepoxide	5-2	0.2 mg water-soluble esterified estrogens
5 mg chlordiazepoxide	5-4	0.4 mg water-soluble esterified estrogens
10 mg chlordiazepoxide	10-4	0.4 mg water-soluble esterified estrogens

THE MUSCLE RELAXANT THAT DOES WHAT'S EXPECTED

AND LESS

Some skeletal muscle relaxants cause generalized muscle weakness. Not Norflex. Some require dosages as high as eight tablets a day for effective relief. Norflex relaxes only the muscles in spasm on one tablet b.i.d. Norflex checks pain. Reduces rigidity. Restores mobility. Has less side effects too. So Norflex does what's expected. And does it with less inconvenience.

Norflex®
(ORPHENADRINE CITRATE)
1 TABLET (100 mg.) B.I.D.

Indications: Acute spasm of voluntary muscles, regardless of location; especially post-traumatic, discogenic, and tension spasms.
Dosage: Two tablets per day for adults, regardless of weight or sex; one in the morning and one in the evening.
Contraindications: Contraindications for Norflex are due to the anticholinergic action of orphenadrine. Norflex should not be used in patients with glaucoma, pyloric or duodenal obstruction, stenosing peptic ulcers, prostatic hypertrophy or obstruction at the bladder neck, cardiospasm (megaesophagus) and myasthenia gravis. It should be used with caution in patients with tachycardia.
Since mental confusion, anxiety and tremors have been reported in patients receiving orphenadrine and propoxyphene concurrently, it is recommended that Norflex not be given in combination with propoxyphene (Darvon®).
Side Effects: Side effects of Norflex (orphenadrine citrate) are mainly due to the mild anticholinergic action of orphenadrine, and are usually associated with higher dosage. Dryness of the mouth is the first side effect to appear. When the daily dose is increased, possible side actions include: tachycardia, palpitation, urinary hesitancy or retention, blurred vision, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, constipation, drowsiness and, rarely, urticaria and other dermatoses. Infrequently, an elderly patient may experience some degree of mental confusion. These mild side effects can usually be eliminated by reduction in dosage. Two cases of aplastic anemia associated with the use of Norflex tablets have been reported. No causal relationship has been established.
For full information, see Package Insert or P.D.R.

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JANUARY, 1971/VOL. 28, NO. 1

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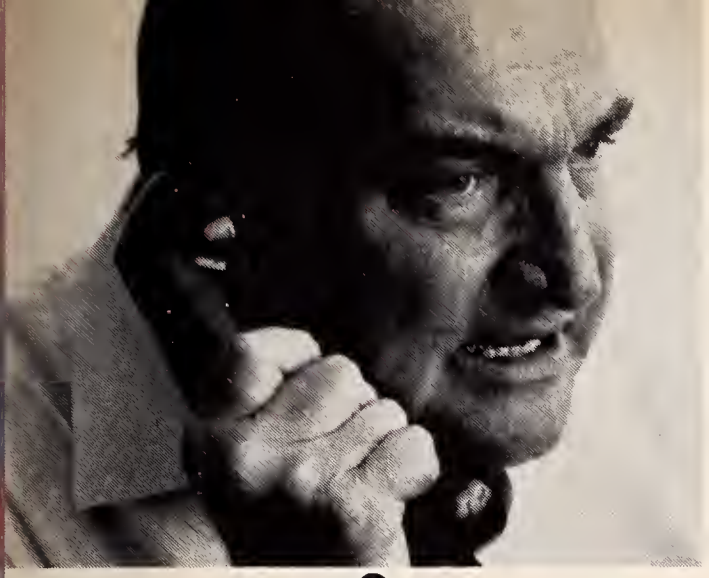
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The Original Articles and Editorials of ARIZONA MEDICINE are the opinions of the authors and do not necessarily represent the official stand of The Arizona Medical Association, Inc. The opinions of the Board of Directors may be sought in the published proceedings of that body.

The duodenal ulcer: often colored by

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Nutley, New Jersey 07110



anxiety

Some things can be readily observed via x-ray. In the case of this active duodenal ulcer, the midportion of the duodenal bulb with its radiating mucosal folds can be visualized.

Some factors can't be seen, especially the excessive anxiety which may have triggered or aggravated the ulcer attack. Yet a close relationship may exist between the emotions and duodenal ulcer, and this relationship is the rationale for Librax.®

Librax is logical therapy because Librax combines, in a single capsule, the well-known antianxiety action of Librium® (chlordiazepoxide HCl) and the dependable antisecretory/antispasmodic action of Quarzan® (clidinium Br).

Since Librax, on recommended dosage, generally does not unduly interfere with mental acuity or ability to function, it is usually well adapted for the majority of patients.

Keep Librax in mind for your next duodenal ulcer patient who presents symptoms of tension and anxiety.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated as adjunctive therapy to control emotional and somatic factors in gastrointestinal disorders.

Contraindications: Patients with glaucoma; prostatic hypertrophy and benign bladder neck obstruction; known hypersensitivity to chlordiazepoxide hydrochloride and/or clidinium bromide.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering Librium (chlordiazepoxide hydrochloride) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards. As with all anticholinergic drugs, an inhibiting effect on lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude development of ataxia, oversedation or confusion (not more than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: No side effects or manifestations not seen with either compound alone have been reported with Librax. When chlordiazepoxide hydrochloride is used alone, drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally with chlordiazepoxide hydrochloride, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax are typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy and constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

Color radiography: an innovative technique

The unusual color radiograph on the opposite page was created by obtaining an original black and white roentgenogram depicting the pathology. From this original film, a duplicate was made.

The images of both the original roentgenogram and its duplicate were then superimposed on a single screen by two matching projectors, each fitted with a filter of a different color. As a result, the areas occupied by contrast material appear in a brilliant primary color, while the other areas, free of this contrast material, assume a different hue.

The projected image was then photographed, producing the color radiograph illustrated here.

For the emotional/somatic problem in G.I. disorders

Librax®

Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium Br.

antianxiety/anticholinergic action with 1 or 2 capsules *t.i.d.* or *q.i.d.*



Give your patients rest from pain

Empirin® Compound with Codeine Phosphate gr. 1/2, No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

B. W. & Co. narcotic products are Class "B", and as such are available on oral prescription, where State law permits.

Complete literature available on request from Professional Services Dept. PML.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

The actions of the official Tincture and Extract of Belladonna result chiefly from their Atropine content . . . conclude Goodman and Gilman

THE PHARMACOLOGICAL BASIS OF THERAPEUTICS
3rd Edition, page 522



ANTROCOL®

Antrocol provides the prompt, predictable antisecretory action of the belladonna alkaloid, atropine, fortified with sedation and blended with Bensulfoid, contributing to even absorption.



Each tablet or capsule contains: Atropine sulfate, 0.324 mg.; Phenobarbital, 16 mg. (may be habit forming); Bensulfoid, 65 mg. (see white section PDR). The atropine content of Antrocol is the maximum amount the average patient can take at six hour intervals over long periods with comfort.

SUPPLIED
Tablet in bottles of 100, 500 and 5000
Capsule in bottles of 100, 500 and 1000

Caution: Federal law prohibits dispensing without prescription.

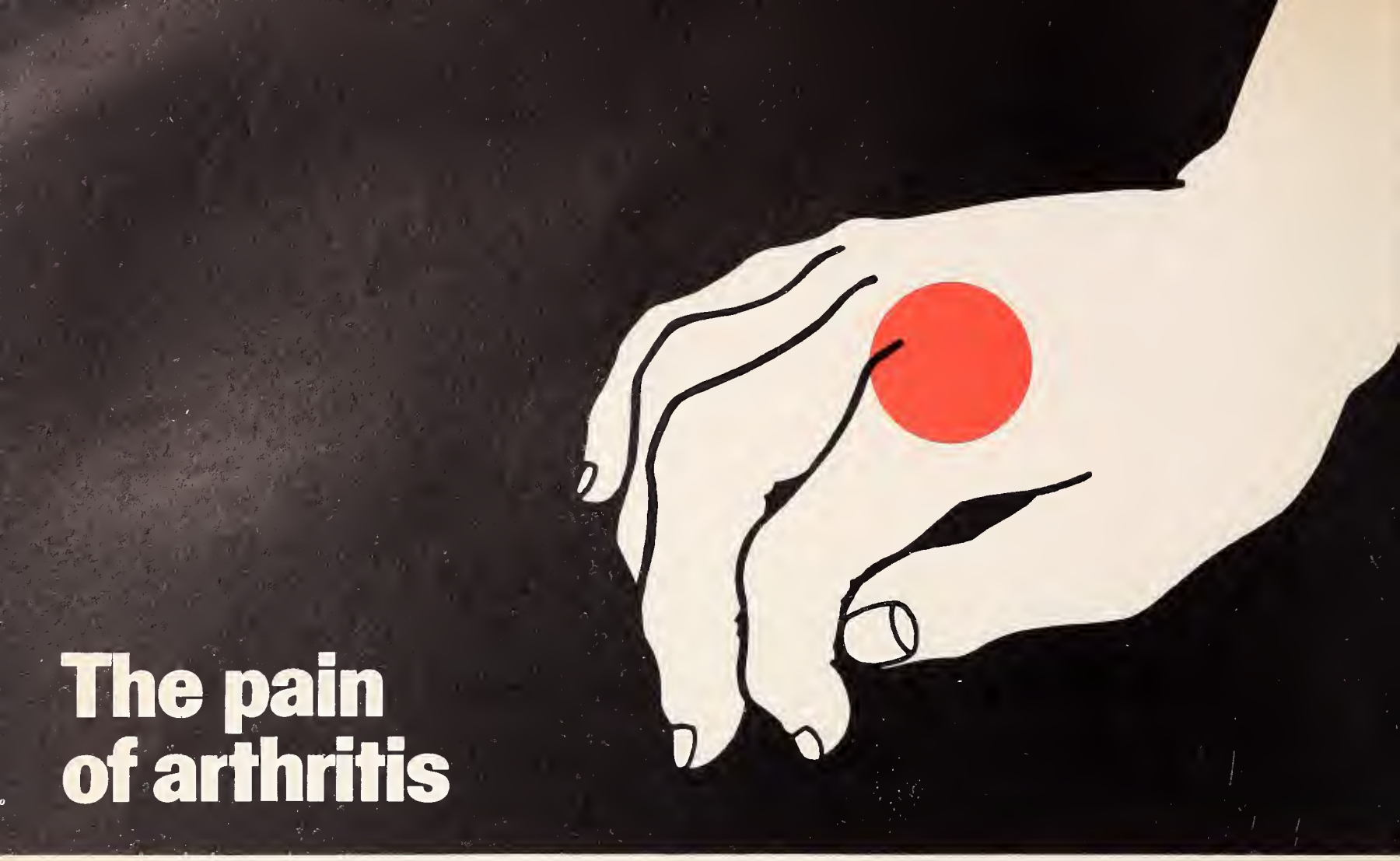
PRESCRIBING INFORMATION

Contraindicated in glaucoma. Use cautiously in prostatic hypertrophy. Side-effects of toxic dose of atropine: flushing, dryness of mouth, cycloplegia, tachycardia and urinary retention.

DOSAGE: One tablet or capsule after each meal to correct emotional stress and normalize gastric secretions. In treating peptic ulcer, doses at regular intervals up to eight (8) tablets or capsules per day to provide the proper gastric titer for healing. After ulcer has healed, one tablet or capsule after each meal to maintain a titer unfavorable to recurrence.

Clinical supply available to physicians.

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RICHMOND, VIRGINIA 23217
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MEASURIN®
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Dosage: 2 tablets followed by 1 or 2 tablets every 8 hours as required, not to exceed 6 tablets in 24 hours. For maximum nighttime pain relief and to help relieve early morning stiffness, 2 tablets at bedtime.
Available: Bottles of 12, 36 and 60 tablets.

The causes of vaginitis are multiple



Trichomonads... monilia... bacteria
You can depend on AVC—comprehensive therapy that combats all three major vaginal pathogens, alone or in combination.

AVC
Cream (aminacrine hydrochloride 0.2%, sulfanilamide 15.0%, allantoin 2.0%)

Suppositories (aminacrine hydrochloride 0.014 Gm., sulfanilamide 1.05 Gm., allantoin 0.14 Gm.)

Contraindications: Known sensitivity to sulfonamides.
Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfonamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide toxicity are reasons to discontinue treatment.
Dosage: One applicatorful or one suppository intravaginally once or twice daily.
Supplied: Cream – Four-ounce tube with or without applicator. Suppositories – Box of 12 with applicator.

TRADEMARK: AVC AV-007A 7/70 Y-149

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AVC
The treatment is singular

A
BUILDING BLOCK
TO RECOVERY



One tablet q.i.d.

Indications: When used as adjunctive therapy for the rapid resolution of inflammation and edema, good results have been obtained in:
☐ Accidental Trauma ☐ Postoperative Tissue Reactions.
Other conventional measures of treatment should be used as indicated. In infection, appropriate anti-infective therapy should be given.
Contraindications: ORENZYME BITABS should not be given to patients with a known sensitivity to trypsin or chymotrypsin.
Precautions: It should be used with caution in patients with abnormality of the blood clotting mechanism such as hemophilia, or with severe hepatic or renal disease. Safe use in pregnancy has not been established.
Adverse Reactions: Adverse reactions with ORENZYME have been reported infrequently. Reports include allergic manifestations (rash, urticaria, itching), gastrointestinal upset and increased speed of dissolution of animal-origin surgical sutures. There have been isolated reports of anaphylactic shock, albuminuria and hematuria. Increased tendency to bleed has also been reported but, in controlled studies, it has been seen with equal incidence in placebo-treated groups. (See Precautions.) It is recommended that if side effects occur medication be discontinued.
Dosage: One tablet q.i.d.

THE NATIONAL DRUG COMPANY
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TRADEMARK: BITABS U.S. PATENT NO. 3,004,893 9/70 0.009A 161

Orenzyme® Bitabs

Trypsin: 100,000 N.F. Units, Chymotrypsin: 8,000 N.F. Units; equivalent in tryptic activity to 40 mg. of N.F. trypsin





Picture of low back pain

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

'arafon Forte tablets help to relieve pain, estore mobility . . . stop pain-spasm feedback

'ere is why. PARAFON FORTE provides:

nonsalicylate analgesic equal to aspirin for relief of ain,[1,2] yet unlikely to cause the gastric irritation[2,3] or in- reased bleeding time[4] associated with aspirin therapy.

nd a skeletal muscle relaxant shown in extensive clinical tudies to be useful in a variety of low back disorders[5-7] .but which is not an antihistamine or tranquilizer deriv- tive and is unlikely to produce a tranquilizing or seda- ve effect.[8]

rescribe PARAFON FORTE for effective spasmolysis and nalgesia in acute sprains, strains and myalgias of the ower back, including acute exacerbations of chronic con- itions. Your patients will appreciate the restored comfort nd freedom of movement it usually provides.

Contraindications: Sensitivity to either component. ***Warnings:*** *Usage in Pregnancy*—Use in woman of child-bearing potential only when potential benefits outweigh possible risks. ***Precautions:*** Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. ***Adverse Reactions:*** Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, *Paraflex* (chlorzoxazone) may possibly have been associated with gastrointestinal bleeding. While *Paraflex* (chlorzoxazone) and chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Usual Adult Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL" —bottles of 100.

References: **1.** Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970. **3.** Vickers, F. N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C. H., Jr., and Britten, A. F. H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Kestler, O. C., and Gyurik, J.: Industr. Med. Surg. *21*:372, 1962. **6.** Forster, S., et al.: Amer. J. Orthop. *2*:285, 1960. **7.** Data on file, McNeil Laboratories, Inc. **8.** Friend, D. G.: Clin. Pharmacol. Ther. *5*:871, 1964.

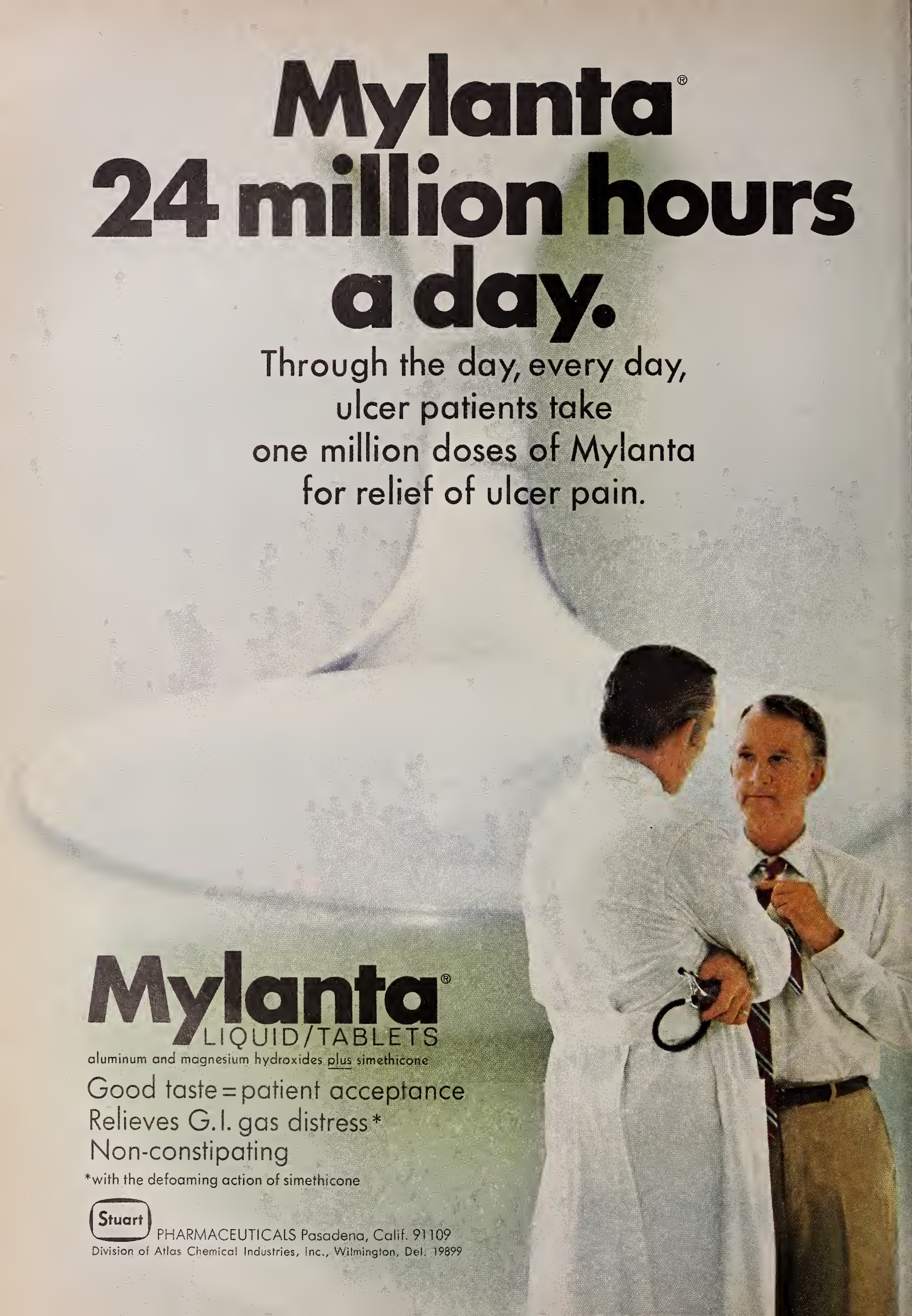
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24 million hours a day.

Through the day, every day,
ulcer patients take
one million doses of Mylanta
for relief of ulcer pain.



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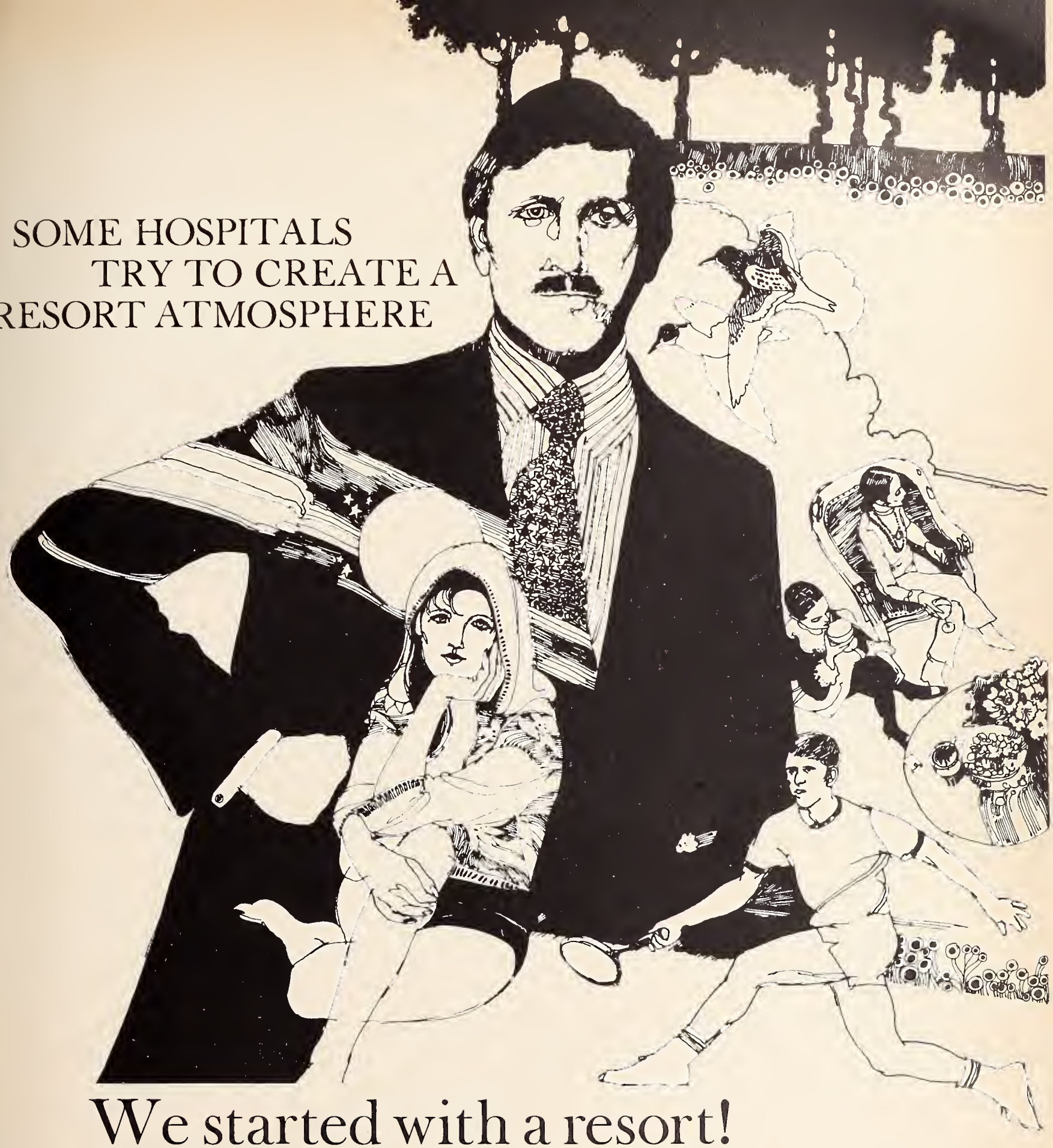
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Good taste = patient acceptance
Relieves G.I. gas distress*
Non-constipating

*with the defoaming action of simethicone

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We started with a resort!

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When irritable colon feels like this



The blowfish, a small spe
of fish, reacts to stress or
fright by puffing itself up
air. After about a dozen
noisy gulps the belly is ball
shaped and hard. When
replaced in the water the
quickly expelled, and
the fish sinks to the botto

...in the presence of spasm or hypermotility, gas distension and discomfort, **KINESED®** provides more complete relief:

☐ belladonna alkaloids—for the hyperactive bowel ☐ simethicone—for accompanying distension and pain due to gas ☐ phenobarbital—for associated anxiety and tension

Composition: Each chewable, fruit-flavored, scored tablet contains: 16 mg. phenobarbital (warning: may be habit-forming); 0.1 mg. hyoscyamine sulfate; 0.02 mg. atropine sulfate; 0.007 mg. scopolamine hydrobromide; 40 mg. simethicone.

Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.

Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.

Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.

Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.



STUART PHARMACEUTICALS | Pasadena, California 91109 | Division of ATLAS CHEMICAL INDUSTRIES, INC.

(from the Greek **kinetikos,**
to move,
and the Latin **sedatus,**
to calm)

KINESED®

antispasmodic/sedative/antiflatulent

Efudex®
(fluorouracil)
cream/solution

In the treatment of solar/actinic keratoses

An alternative to cold, fire and steel

2/23/68
Before treatment with 5% 5-FU cream. Patient R. G., 78 years old, shows extensive skin changes due to weathering and severe solar/actinic keratoses.

3/26/68
Following one month of therapy. Intense erythematous reaction is seen at sites of keratoses. Normal skin has not reacted. Some areas which had reacted initially have undergone healing despite continued topical application of 5% 5-FU.

6/11/68
Ten weeks after discontinuance of therapy. All areas have healed complet Residual mild erythema remains in so areas. This patient also had seborrheic keratoses which, as expected, have no reacted. There is no evidence of residu lesions or recurrences.



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Nutley, N.J. 07110

n alternative conventional therapy

Efudex (fluorouracil) offers the physician a al alternative to cryosurgery, electrodesiccation old-knife surgery in the treatment of solar/actinic oses. It is effective, comparatively inexpensive and ially well suited for treatment of these multiple ns. Important, too, is the highly desirable cosmetic t. Clinical experience demonstrates that treatment Efudex results in an extremely low incidence of ing.*

ghly effective

In clinical trials, depending on the dosage form trength used, complete involution occurred in 88 per cent of lesions following treatment. The of recurrence was low, ranging from 1.7 to 5.6 per up to a year after completion of therapy. When esions appeared, repeated courses of Efudex py proved effective.*

edictable erapeutic response

Two to four weeks constitutes a typical course udex therapy. The response is usually characteris- d predictable. After three or four days of treat-, erythema begins to appear in the area of keratoses. is followed by an intense inflammatory response, ng and occasionally moderate tenderness or pain. eight of the inflammatory reaction generally occurs weeks after the start of therapy, and then begins bside as treatment is stopped. Within two weeks of ntinuing medication, the inflammation is usually . A mild erythema may remain for two or three hs before gradually receding. Since this response predictable, lesions which do not respond ld be biopsied.

vo strengths—two sage forms

Efudex is available as a 2% or 5% solution or % cream. It is applied twice daily by the patient a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, two im- nt considerations: First, please consult the com- prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

on file, Hoffmann - La Roche Inc., Nutley, New Jersey.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

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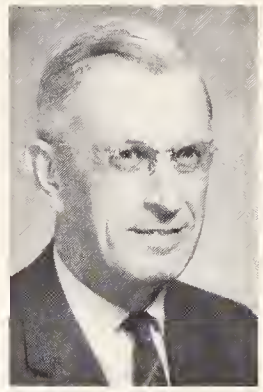
PRIMARY SQUAMOUS CELL CARCINOMA OF THE TRACHEA SUCCESSFULLY TREATED WITH RADIATION



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REPORT OF A CASE

Primary squamous cell carcinoma of the trachea is a rare entity accounting for less than one-tenth of one percent of reported deaths from cancer. McCafferty, et al[1], noted in a 1964 review of the literature that only 381 cases of primary malignant disease of the trachea had been reported. Most texts and monographs on radiology, radiotherapy and pathology approach the subject with a few descriptive words listing malignant disease of the trachea as one of the malignancies rarely encountered. The course of the disease is such that early diagnosis is uncommon and limited experience may hamper treatment.

This report presents an apparent cure of a primary squamous cell carcinoma of the trachea treated with a high dose of radiation.

CASE REPORT

The patient, a 55 year old white male (St. Luke's Hospital 00-55-53) in September of 1964, complained of severe chest pain. He was admitted to another hospital where a roentgenogram of the chest revealed no abnormality. The patient was given symptomatic treatment and discharged. Persistent cough, hemoptysis, and intermittent fever were noted and he again consulted his physician in February, 1965. He was first admitted to St. Luke's Hospital on March 1st of 1965. During the hospital stay, a bronchogram revealed chronic bronchitis. No other abnormality was found and he was discharged on antibiotic therapy. The patient worked as an accountant during the following two months but cough and hemoptysis progressed with continued expectoration of quantities of bright red blood.

On July 1st, 1965, an episode of coughing, with marked hemoptysis, was first associated with the sensation of a cervical mass. He was re-admitted to St. Luke's Hospital. Physical examination revealed a well developed, well nourished, white male who appeared slightly pale but in no acute distress. No palpable supraclavicular, cervical or axillary nodes were found. The trachea was in the midline, the chest was symmetrical and on auscultation the lung fields were clear. There was no cyanosis or clubbing. Laboratory data included a normal hemoglobin, hematocrit, white blood cell count and differential. The sedimentation rate, however, was somewhat elevated at 26 mm/hour. A chest roentgenogram revealed mild emphysematous changes. An esophogram disclosed a sliding hiatal herniation with spasm of the lower esophageal segment, secondary to low grade gastroesophageal reflux.

On laminography of the superior mediastinum and neck, a 3.8 cm lobular mass was seen to arise from the right lateral wall of the trachea between C-7 and T-1, just below the true vocal cords (Figure 1). A considerable degree of encroachment of tracheal airway was noted as well.



Figure 1.
Tomograph of the trachea with Large polypoid mass outlined.

On July 7th, 1965, bronchoscopy was carried out under general anesthesia. Just below the true vocal cords, a soft, polypoid lesion, covered in part by blood, and occupying the posterior and both lateral portions of the tracheal lumen was observed. The bronchoscope could not be passed beyond the lesion. Multiple biopsies were reported as invasive squamous cell carcinoma, Grade III.

Radiotherapy was elected as the primary treatment and therapy was initiated on July 12th, 1965. The radiation was delivered with an orthovoltage unit. Technical factors included a Thoraeus II filter with a half value layer of 1.7 mm of copper, tube current of 18 MA and 260 KVP, and a 50 cm skin target distance. Portals over the site of the lesion included two opposing lateral fields and one anterior field, each measuring 4 x 5 cm. By August 19th, 1965, 2500 roentgen in air had been delivered to each of the three portals, without patient distress or unusual effect. Repeat laminographic examination demonstrated the tracheal mass to be slightly smaller and less nodular with diminished encroachment on the tracheal lumen. Repeat bronchoscopy and biopsy revealed persistent invasive cell carcinoma. It was elected to continue the radiation to the maximum dose tolerable by the patient. By September 13th, 1965, the portal doses were increased to an average of 4100 roentgen in air. The total radiation was delivered over 53 out-patient days. Skin pigmentation and epitheleitis were moderate and no other significant reaction ensued.

On patient evaluation three years later, the treated skin area showed minimal pigmentation and mild telangiectasia (Figure 2). The cervical



Figure 2.
Treated skin area.

area was free of recurrence of neoplasm and no evidence of metastatic disease was found. Repeat laminograms of the trachea revealed slight scalloping of the medial tracheal margins just below the true vocal cords without evidence of recurrence of tracheal neoplasm. The tracheal wall appeared smooth and normal (Figure 3).

A repeat bronchoscopy revealed the surface of the trachea to be smooth, white and glistening, with no compromise of its lumen or irregularities in the profile margins. Biopsy was re-

ported as respiratory mucosa with focal areas of necrotizing tracheitis but no evidence of persistent malignancy.



Figure 3.
Tomograph of the trachea obtained three years following therapy.

DISCUSSION

Primary squamous cell carcinoma of the trachea is extremely uncommon; its early diagnosis infrequent; and sucessful therapeutic management, rare.

Fleming, et al[2], reviewed the techniques of the roentgen diagnosis of tracheal masses and, in the discussion, presented a single case of squamous cell carcinoma of the trachea. The importance of demonstration of a mass within its lumen is stressed. The value of tomography in revealing tracheal lesions is indicated, as was demonstrated by our case herein reported.

Radiation therapy alone or combined with surgery has been used extensively prior to the newest surgical techniques. Sorensen[3], discussed a case which was treated with 5900 roentgens (factors of radiotherapy were not described) with recurrence in six months. A tracheal resection was carried out with an end-to-end anastomosis but recurrence was again demonstrated and the patient received an additional 4480 roengen with regression, but not disappearance, of the lesion. Another surgical procedure was carried out following a third recurrence which was treated with radium seeds. The patient expired 15 months later with extensive metastatic disease.

Ranke, et al[4], discussed two patients, with tracheal carcinoma seen in a 34 year period at the St. Francis Hospital, Evanston, Illinois. In one case, the diagnosis was not entertained during the patient's lifetime. At autopsy, this was the cause of death. The second patient was diagnosed by biopsy and was treated with radiation but died within a year with extensive disseminated disease.

Clagett, et al[5], stated in 1952 that roentgen therapy and implantation of radium seeds has accomplished some palliation but "has never been curative of malignant lesions of the trachea." This paper reported one squamous cell carcinoma of the trachea treated by resection with death within two years with widespread metastases. Tinney, et al[6], reported on tumors of the trachea in 1945 which included 11 cases of squamous cell carcinoma of the trachea seen between 1921 and 1945. In the list of patients, there is a reference to a 29 year old white female alive nine years after being treated with radium. One patient was lost to follow-up, and the remainder were dead within 12 months of their original diagnoses.

The dismal results encountered with the modalities of therapy utilized in the past have encouraged, in recent years, a fresh surgical approach in the management of treacheal lesions. The number of primary tracheal carcinomas so treated, however, remains rather limited. Mathey, et al[7], described 20 cases of tracheal resection which included but two primary tracheal carcinomas. Both patients were treated with resection; one patient apparently doing well six months following surgery, and the second patient died in the post-operative period. Grillo[8], reported one case of squamous cell carcinoma of the lower trachea treated surgically with a good result on his paper on the approaches of tracheal reconstruction.

The relative immunity of the trachea to neoplastic formation is quite evident. Contrarywise, in reviewing the histopathology of reported deaths, the larynx and bronchopulmonary areas are the sites of the most common malignancies in man. Bronchogenic carcinoma has reached epi-

demic proportions in the United States, but tracheal carcinoma has remained a rare disease[3&6]. The presence of an auto-immune mechanism may be postulated with some certainty.

This case report demonstrated the difficulty, which has been noted by others, in making the original diagnosis of a primary tracheal carcinoma. The patient had fever, hemoptysis and cough with two hospital admissions but without diagnosis. Cough and hemoptysis are such common clinical symptoms that the underlying uncommon cause may not be considered. Dyspnea is a relatively late occurrence in tracheal carcinoma and was consistently denied by this patient. Conventional chest radiographs usually do not establish a diagnosis. They may, as we have found, be misleading when other chest disease processes are revealed. Grid or "Bucky" films of sufficient penetration to reveal the tracheal configuration, however, may reveal the lesion as may laminographic studies of the trachea.

In planning a treatment course for this patient, aggressive radiation was elected and complications were anticipated. None of the expected complications arose. No adverse effects to the skin or trachea were demonstrated five years following the completion of the radiation course.

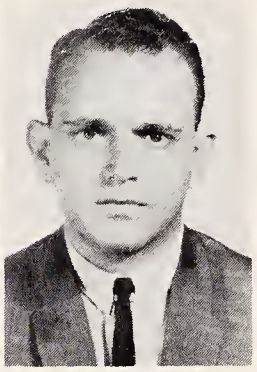
SUMMARY

A case of squamous cell carcinoma of the trachea is reported. Therapy with aggressive radiation was elected. 12,300 roentgen in air were delivered to the lesion through three portals. The skin and trachea showed no adverse effects of significance five years following the completion of the radiation course and no other complications arose. A roentgenogram of the chest, tomographs of the tracheal area, and endoscopic follow-up with tracheal biopsies, have revealed no evidence of recurrent disease.

BIBLIOGRAPHY

1. McCaffetry, G. J., Parker, L. S., Suggit, S. C.: Primary Malignant Disease of the Trachea; **J. Laryng.**, 78:441-479, May 1964.
2. Fleming, R. J., Medina, J., Seaman, W. B.: Roentgenographic Aspects of Tracheal Tumors; **Radiol.**, 79:628-636, Oct. 1962.
3. Sorensen, Hans R.: Cancer of Trachea — Resection and Thoracotracheostomy; **Acta. Chir. Scand. Suppl.**, 356:148-150, 1965.
4. Ranke, E. J., Presley, S. S., and Holinger, P. H.: Tracheogenic Carcinoma; **JAMA**, 182:519-522, Nov. 3, 1962.
5. Clagett, O. T., Moersch, H. J., Grindlay, J. H.: Intrathoracic Tracheal Tumors; Development of Surgical Technics for Their Removal; **Ann. Surg.**, 136:520-532, 1952.
6. Tinney, W. S., Moersch, H. J., McDonald, J. R.: Tumors of the Trachea; **Arch. Otolaryng.**, 41:284-290, 1945.
7. Mathey, J., Binet, J. P., Galey, J. J., Evrard, C., Lemoine, G., and Denis, B.: Tracheal and Tracheobronchial Resections; Technique and Results in 20 Cases; **J. Thoracic & Cardiovas, Surg.**, 51:1-13, Jan. 1966.
8. Grillo. H. C.: Circumferential Resection and Reconstruction of the Mediastinal and Cervical Trachea; **Ann. Surg.**, 162:374-388, Sept. 1965.

ADENOCARCINOMA OF THE COLON (Review of 175 Cases)



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CANCER OF THE COLON IS THE LEADING CAUSE OF DEATH FROM NEOPLASTIC DISEASE IN THE UNITED STATES. A REVIEW OF EIGHTEEN AND ONE-HALF YEARS' EXPERIENCE WITH THIS CARCINOMA AT THE MARICOPA COUNTY GENERAL HOSPITAL IS REPORTED. IN SPITE OF IMPROVEMENTS IN THE FIELD OF COLON SURGERY THE OVERALL SURVIVAL RATE HAS NOT CHANGED. EARLY DIAGNOSIS AND ADEQUATE TREATMENT CAN PROVIDE OPTIMUM CONDITIONS TO IMPROVE THE SURVIVAL RATE.

CLINICAL MATERIAL*

The records of 175 patients with histologic diagnosis of adenocarcinoma of the colon who were admitted to the Maricopa County General Hospital, from July 1, 1948 through November 30, 1966, were reviewed. Ninety-two percent of the surgical procedures were performed by the residents under direct supervision of the attending physician; eight percent were performed by the attending physicians. Eleven of the patients were lost for follow-up studies but will be considered to have died of carcinoma as of the time of their last clinic examination.

Age, Sex and Race

There were 91 men and 84 women; ages 33 to 96 years (average was 64 years). There were 124 Caucasian, 28 Spanish-American and 23 Negro persons.

Signs and Symptoms

The most frequent symptoms were rectal bleeding and a "bowel complaint" of constipation, diarrhea, or a change in stool caliber. Eleven percent of the patients had an abdominal mass. Obstruction was the primary symptom in nine of nineteen persons who presented with acute bowel obstruction. Between symptom and diagnosis the time lapse was extremely variable; from asymptomatic to 24 months.

Diagnostic Procedures

When the lesion was in the rectum or rectosigmoid, the tumor was found 98 percent of the time on procto-sigmoidoscopy.

Overall roentgenographic accuracy was 88 percent. It was 91 percent when the lesion was in the rectosigmoid, 96 percent when in the right colon, and 100 percent when present in the transverse colon.

Location of Neoplasm

Of the colon lesions, 72.6 percent were in the rectum or rectosigmoid. Multiple adenocarcinomas were found in two patients.

Staging of Neoplasm

There were five cases classified as Dukes[3] A (tumor limited to mucosa and extending up to muscularis), 16 cases Dukes B (tumor up to serosa), and 154 cases Dukes C (tumor extending through the serosa of the bowel, or with lymphatic dissemination).

*Detailed statistics are available upon request; the signs and symptoms, the location of the tumor, the age and sex in decades, and the time in months between onset of symptoms and the diagnosis.

TREATMENT

Surgical Group

The primary therapy was surgical. None received radiation. After 1961, chemotherapeutic agents were used as adjunctive treatment for the patients who had had palliative procedures.

Surgical procedures were performed on 154 persons (Table I) with an operative mortality rate of 13.6 percent. After 1961, the mortality was 5.9 percent.

TABLE I
ADENOCARCINOMA OF THE COLON
Definitive Surgery
(154 Cases)

	"Curative" Resection	Palliative Resection	Palliative Decompression	Operative Deaths
Abdomino-Perineal Resection	33	9		5
Anterior Resection	22	8		2
Right Colectomy	12	11		4
Left Colectomy	11	2		
Transverse Colectomy	2	3		
Polypectomy (Procto)	1			
Ileo-Transverse By-pass			6	2
Transverse Colostomy			27	6
Sigmoid Colostomy			7	2
TOTAL	81	33	40	
Deaths	6	5	10	21
Operative Mortality Percent	7.1	15.1	25.0	13.6

Hypovolemia was the most common cause of death within the first two days. Myocardial infarction and peritonitis due to leakage of anastomosis were the most frequent causes of death after 48 hours. (Table II).

TABLE II
ADENOCARCINOMA OF THE COLON
Overall
Operative Mortality
(21 Cases)

	Within 48 Hours	48 Hours to 4 Weeks
Hypovolemia	7	
Hemorrhage	2	
Sepsis	2	1
Myocardial Infarction	1	3
Leakage Anastomosis With Peritonitis		3
Renal Failure		1
Pulmonary Embolus		1
TOTAL	12	9

Non-Operative Group

Of the 21 patients in the non-surgical group, eleven refused operation, six died in preoperative evaluation and four were diagnosed at autopsy. The interval between symptoms to death was from one to 29 months, with an average duration of life of 10.5 months; carcinomatosis was the cause of death. An autopsy was performed on twelve patients, and the other nine had clinical evidence of metastases.

SURVIVAL

Only 120 patients were able to be considered for analysis of more than a five year survival; fifteen patients survived for five years, seven lived ten years and two were alive fifteen years. There were eighteen deaths in the postoperative period.

Dukes Classification with "Curative" Resections (Fig. 1)

Four persons had a tumor with a Dukes A classification; three lived ten years, and two were still alive without disease fifteen years after resection.

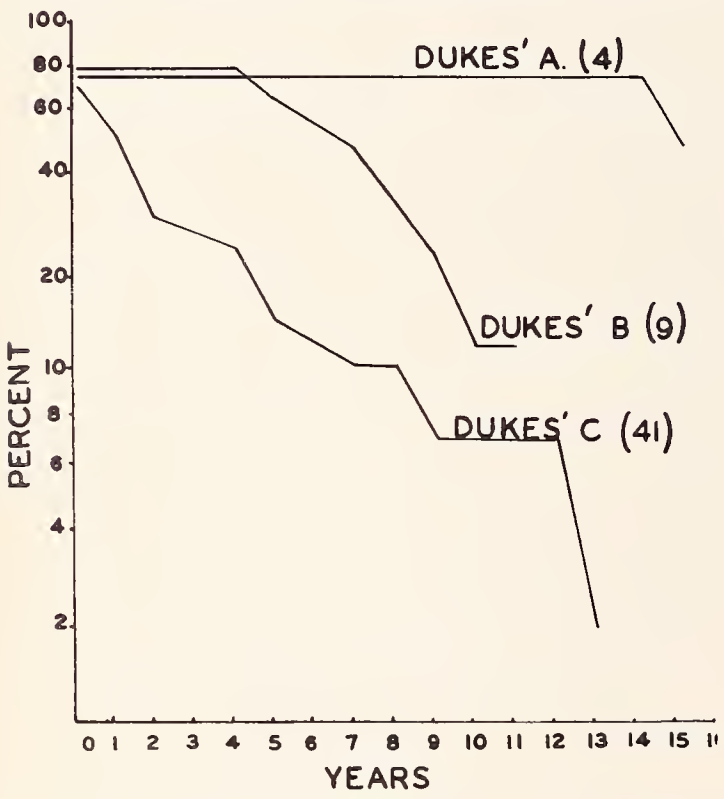


Figure 1
The uncorrected yearly survival rate of 54 patients with "curative" resections according to Dukes classification, 1948-1961.

Of the nine persons with Dukes B tumor classification, six survived five years but only one lived ten years.

Survival of persons with a Dukes C tumor classification (forty-one) was poor, with only 15 percent alive five years and less than half of that living ten years.

There were no fifteen year survivors for Dukes B or C tumors.

Overall Survival Rate (Fig. 2)

None of the non-operative group of persons (fifteen) survived a year. Palliative procedures (fifty-one) prolonged life only minimally; no one lived five years. "Curative" resections (fifty-four) netted a thirty percent five year survival, fourteen percent for ten years, but only four percent at fifteen years.

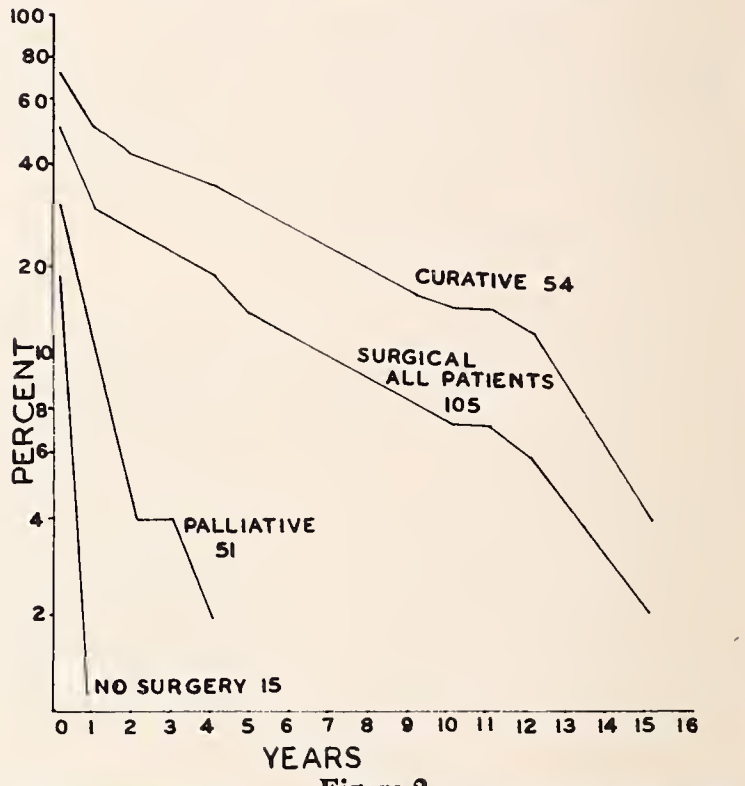


Figure 2
The overall uncorrected yearly survival rate of 120 patients, 1948-1961.

DISCUSSION

In spite of many advances in the field of colon surgery it is distressing that the overall survival rate of patients with carcinoma of the colon has not changed.[1, 2, 4]

In the present study the majority of the operative deaths were possibly correctable as they appeared to be problems of surgical technique (anastomotic leaks) or surgical management (hypovolemia and hemorrhage).

Rectal bleeding, change in bowel habits, weight loss, weakness, unexplained anemia, abdominal pain or obstruction were common signs and symptoms, and should alert a physician to thoroughly investigate the colon as a possible site of malignancy.

Each of the nineteen patients with acute bowel obstruction was dead within twenty-nine months; an average survival of 10.5 months. In twelve of these patients, distant metastases were already present at the time of diagnosis.

Perforation of the bowel due to the malignancy was present in three cases; one in the ascending colon found at time of autopsy, one on the sigmoid colon, and one in the transverse

colon that produced a gastrocolic fistula.

It has been generally reported that time lapse between symptoms and diagnosis is still quite prolonged. There appears to be no significant relationship between symptom duration and "cure." Many patients with a short history of symptoms may have metastases present at the time of diagnosis. Conversely, patients with symptoms of a long duration may have tumors permitting a "curative" resection. However, there may be some relationship between symptom duration and the histologic differentiation of the adenocarcinoma.[5, 6]

In patients with lesions in the rectum or rectosigmoid, sigmoidoscopy was supportive in the diagnosis 98 percent of the time. Considering that seven out of ten adenocarcinomas were in these areas, the importance of this procedure for earlier diagnosis is apparent. This study should be considered a routine for patients over forty years of age.

Roentgenographic findings for carcinoma were seen in 88 percent of the cases, with a higher degree of success for lesions in the right and transverse colon. However, it is still debatable whether this study should be routine examination for patients over forty years of age.[7, 8]

A county hospital population is characterized by people who, due to ignorance, fear, or economic factors, often leave the attention of an important disease until a very advanced condition develops. Of the 175 cases, 88 percent were Dukes C. This is a much greater incidence than the 32 to 39 percent of Dukes C tumors reported by other investigators.[9, 10]

"Curative" resections were performed on fifty-two percent of the patients with an operative mortality of 7.1 percent. Before 1961, the overall operative mortality of 105 persons was 17 percent, but from 1961 to December 1966, 49 persons were operated on with a mortality of 5.9 percent.

Operations were not done on 21 patients. The average duration of life (10.5 mo.) in this untreated group is similar to that (9.8 mo.) reported by Pestana and associates.[11]

By limiting the evaluation to patients who had potentially curable lesions, satisfactory operations, and no complications, one could derive better survival rates. Such data has little value and often gives a false impression of the real prognosis. All patients (105) operated on before 1961 were considered for survival (there were 18 postoperative deaths). The overall five year survival rate was 14 percent. A 30 percent five year survival, and a four percent 15 years survival rate were obtained with "curative" resections. No patient survived five years who had had a palliative procedure or did not undergo surgical treatment. These figures are lower than reported in other publications.[2, 12-14]

SUMMARY AND CONCLUSIONS

During an eighteen and one-half year period (1948-66) 175 patients with histologic diagnosis of adenocarcinoma of the colon were seen at Maricopa County General Hospital. Of the 154 who were operated upon only 81 patients had "curative" operations.

It is tragic that tumor extension through the bowel wall or lymph node metastases, or both, were present in 88 percent of all of the patients.

With over seventy-two percent of the lesions in the rectum or rectosigmoid, the value of the rectal and procto-sigmoidoscopic examinations is evident.

Patients undergoing a "curative" resection had only a 30 percent five-year survival rate. The overall five-year survival was 14 percent and there were no five-year survivors of patients who had had palliative procedures.

Early diagnosis, adequate surgical procedures, careful preoperative evaluation and competent postoperative care can provide optimum conditions to improve the survival rate.

REFERENCES

1. Langman, M. J. S. Current Trends in the Epidemiology of Cancer of the Colon and Rectum. Proc. R. Soc. Med., 60:210, 1967.
2. McSherry, C. K., Cornell, G. N. and Glenn, F. Carcinoma of the Colon and Rectum. Ann. Surg.: 169. 502, 1969.
3. Dukes, C. E. The Classification of Cancer of the Rectum. J. Path. Bact. 35:323. 1932.
4. Ackerman, L. U. and del Regato, J. A. "Cancer of the Digestive Tract," in Ackerman, L. U. and del Regato, J. A. (eds): Cancer ed 3. Saint Louis: The C. V. Mosby Co., pp. 645-695.
5. Palumbo, L. T., Sharpe, W. S. and Henry, J. S. Cancer of the Colon and Rectum. Analysis of 300 cases. Am. J. Surg. 109:489 1965.
6. McSwain, B., Sadler, R. N., and Main, F. B. Carcinoma of the Colon, Rectum and Anus. Ann. Surg. 155:782, 1962.
7. Berk, R. N., Sadowsky, N. L. and Levenson, S. S. Carcinoma of the Cecum and Ascending Colon. Analysis of 91 cases. Am. J. Surg., 104:27. 1962.
8. Cooley, R. N., Agnew, C. H. and Rios, G. Diagnostic Accuracy of the Barium Enema Study in Carcinoma of the Colon and Rectum. Am. J. Roentgenol., 84:316. 1960.
9. Deddish, M. R., Stearns, M. W. Anterior Resection For Carcinoma of the Rectum and Rectosigmoid Area. Ann. Surg. 154:961. 1961.
10. Glenn, F., McSherry, C. K. Carcinoma of the Distal Large Bowel. 32-year review of 1 026 cases. Ann Surg., 163:838, 1966.
11. Pestana, C., Reitemeier, R. J. Moertel, C. G., Judd, E. S. and Dockerty, M. D. The Natural History of Carcinoma of the Colon and Rectum. Am. J. Surg., 108:826. 1964.
12. Fletcher, W. S., Krippaehne, W. W., Hardwick, C. E., and Dunphy, J. E. Carcinoma of the Colon and Rectum. Results of treatment in a county hospital population. Am. J. Surg., 105: 117 1963.
13. Garlock, J. H., Lerman, B., Klein, S. H., Lyons, A. S., and Kirschner, P. C. Twenty-five Years' Experience with Surgical Therapy of Cancer of the Colon and Rectum: An Analysis of 1,887 Cases. Dis. Colon & Rectum, 5:247 1962.
14. Floyd, C. E., Stirling, C. T., and Cohn, I. Cancer of the Colon, Rectum and Anus. Review of 1,687 cases. Ann. Surg., 163:829, 1966.

MEDULLARY CARCINOMA OF THE THYROID WITH HYPERCALCITONINEMIA AND HYPOCALCEMIA



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Medullary Carcinoma of the thyroid is of considerable metabolic interest because of its high calcitonin content. The patient reported here wth this condition survived 6 years after surgery and radiation treatment. Markedly low blood levels of calcium and phosphorus were present without tetany. High calcitonin activity was demonstrable in blood and urine.

Medullary carcinoma of the thyroid has become a tumor of great interest recently because of its high content of the newly described hormone, calcitonin.[1-5] Only about three hundred cases have been reported to date, and only the last few have had calcitonin surveys. This tumor has also been reported in association with pheochromocytoma, carcinoid-like syndrome, Cushing's syndrome, and parathyroid adenoma. The tumor is thought to arise from parafollicular cells of the thyroid. The case to be reported is only the second with hypocalcemia.

CASE REPORT

A 75 year old male was noted to have lumps in the neck in October, 1962. A biopsy of one of the neck masses led to the diagnosis of metastatic solid carcinoma of the thyroid with amyloid stroma. One month later a radical dissection was attempted with sacrifice of the left recurrent laryngeal nerve. However, residual tumor was left, bilaterally adherent to the subclavian vessels, for which he was given x-ray therapy to the neck.

He did well until April of 1964 when a clinical recurrence in the left supraclavicular region was treated with 2000 R. In February, 1967 and again in October, 1967 left sided recurrence was treated with x-ray. Thereafter he complained of inability to swallow, weakness, and weight loss. In September, 1968 he was readmitted to the hospital for radiation to the lumbar spine after x-rays showed probable lumbar vertebral metastases. In November and December, 1968 he received five grams of 5-Fluorouracil in divided doses and further radiation therapy to both sides of the neck without improvement.

At this time a survey SMA-12 was performed and revealed a calcium level of 5.3 mgs% and a phosphorus of 1.6 mgs%. Ionized calcium was 2.4 mgs%. The BUN was 13 mgs%. Urinalysis was consistently 3+ for protein, and an IVP was normal. Sodium 145, potassium 1.8, chlorides 87, and CO_2 40, all in mEq/L. Total protein was 5.5 gms% and albumin was 2.6 gms%. The LDH was elevated at 325 units. X-ray of the chest revealed pulmonary fibrosis and emphysema of moderately severe degree. A liver scan with Au 198 showed an enlarged left lobe and probable metastases. The EEG showed no focal abnormality. His major problems continued to be dysphagia and severe depression. At no time was there any tetany. The PBI was 2.5 mcgs%. Although the hypoproteinemia makes this difficult to interpret, this together with the report by Wahner, et al,[4] led to a trial of Triiodothyronine gradually increased to 100 micrograms per day. He was also given calcium and phosphorus orally and Vitamin D (as Drisdol) 100,000 units per day. There was a gradual improvement in his sense of well-being and in the calcium and phosphorus levels. On March 3, 1969 calcium was 8.6 mgs% and phosphorus was 2.6 mgs%. He was also given supplemental potassium chloride, but his serum potassium level did not rise above 2.5 mEq/L.

He was transferred to an extended care unit where his dysphagia gradually worsened until he had no caloric intake, and he expired. Consent for a post-mortem examination was refused. During his last hospitalization, immediately after Vitamin D therapy was begin, samples of his blood and urine were surveyed for calcitonin content. The serum contained 0.1 MRC units of calcitonin per cc, and the urine was active in a dose of ⅛ ml. Normal urine and serum give a negative response in this type of assay.

COMMENT

The level of ionic calcium is of great importance in muscle contraction, neuromuscular excitability and membrane permeability and is remarkably controlled in the healthy human, varying only plus or minus 3%.

Recent experience with dialysis patients having renal osteodystrophy as discussed earlier today has shown how little we understand the fundamental mechanisms in the control of the serum calcium concentration.

Parathyroid hormone is a major factor in this control but other factors are involved – especially Vitamin D – or more likely a metabolite, 25 hydroxy Vitamin D, which increases calcium transport across the intestinal mucosa. The liver is probably the major organ involved in Vitamin D metabolism. Other factors are phosphate concentration and pH of extracellular fluid and possibly the magnesium concentration.

The first action of parathyroid hormone is a decrease in renal tubular reabsorption of phosphorus. This leads to increased phosphate excretion and this in turn decreases the calcium and phosphate ion product and leads to bone resorption. The second, slightly delayed and intense reaction, is a direct action on bone leading to bone resorption.

Hypocalcemia is an efective stimulus for increased release of parathyroid hormone. However, attempts to prove that hypercalcemia was controlled by suppression of parathyroid hormone led to the recognition of calcitonin.[6] It has also been called thyrocalcitonin to indicate its derivation in the human from ultimobranchial cells embedded in the thyroid; these cells formerly were called parafollicular or light cells and have now been renamed C-cells. Calcitonin has a molecular weight of aproximately 3,600 with 32 amino acid residues. It is stored in granules as a reserve in the C-cells in the thyroid and responds to hypercalcemia by inhibiting osteolysis resulting in the lowering of calcium and phosphorus levels. Calcitonin action is not effected by pituitary or thyroid hormones.

The hypocalcemic response to calcitonin is very dependent on age and rate of bone resorption. Its effect therefore is small in normal human adults. It has lowered the blood calcium level in osteoporosis, Paget's disease, Vitamin D intoxication, hypercalcemia secondary to cancer, and in hyperparathyroidism. However, whether or not it will have an effect on the skeletal changes in these diseases is yet to be proved.

The patient reported here had a very low level of calcium over a prolonged period of time. The report of Melvin and Tashjian[5] is the only other case with medullary thyroid carcinoma reported as having hypocalcemia, despite the fact that there are a number of reports indicating large amounts of calcitonin in this type of tumor tissue. Why this patient did not have tetany in the face of an ionized calcium of 2.4 mgs% and a calcium level of approximately 5 mgs% is not clear. The combination of hypoproteinemia, probable hypothyroidism and hypopotassemia may be important in this regard. In restrospect, it is unfortunate that no parathyroid hormone assay was performed, as well as a calcium balance study. It may be that surgery, and repeated radiation therapy to the neck caused hypoparathyroidism. Certainly there was a good response to Vitamin D and oral calcium therapy. Whether the Triiodothyronine therapy was important in this patient is not clear. Wahner, et al, reported the tumor was sensitive to Triiodothyronine therapy and regressed.[4] There was no evidence of any regression of the tumor in this patient.

SUMMARY

A patient with medullary thyroid carcinoma is presented. He survived over six years after the original surgery and near the end of his life had very low calcium and phosphorus levels but without tetany. Bio assay revealed a high level of calcitonin activity in his serum and urine. The calcium and phosphorus levels returned toward normal after therapy with Vitamin D, calcium-phosphate diet supplement, and Triiodothyronine.

ACKNOWLEDGEMENT

I would like to acknowledge the help of Doctor J. S. Meyer, University of Missouri, Department of Pathology, Columbia, Missouri, and Doctor William Sutton, Veterans Administration Hospital, St. Louis, Missouri, who performed the calcitonin Bio-survey.

BIBLIOGRAPHY

1. Dubé, W. J.; Bell, G. O.; Aliapoulis, M. A.: Thyrocalcitonin Activity in Metastatic Medullary Thyroid Carcinoma, Arch. Intern Med. 123:423-427, April 1969.
2. Cunliffe, W. J.; Hall, R.; Hudgson, P.; Gudmundsson, T. V.; Black, M. M.; Johnston, I. D. A.; Shuster, S.; Joplin, G. F.; Woodhouse. N. J. W.; Galante, L.; MacIntyre, I.; A Calcitonin-Secreting Thyroid Carcinoma, Lancet II (1968) 63-66.
3. Myer, J. S.; and Abdel-Bari, W.: Granules and Thyrocalcitonin-like Activity in Medullary Carcinoma of the Thyroid Gland, New Eng J. Med. 278: 523-529 (March 7) 1968.
4. Wahner, H. W.; Cuello, C.; and Aljure, F.: Hormone-Induced Regression of Medullary (Solid) Thyroid Carcinoma, Am J. Med. 45: (Nov) 1968.
5. Melvin, K. E. W.; and Tashjian, A. H., Jr.: The Snydrome of Excessive Thyrocalcitonin Produced by Medullary Carcinoma of the Thyroid, Proc Nat Acad Sci USA, 59: 1216-1222 (April) 1968.
6. Copp, D. H.: Calcitonin in Adv. in Intern Med. Vol XIV 55-82 (1968).

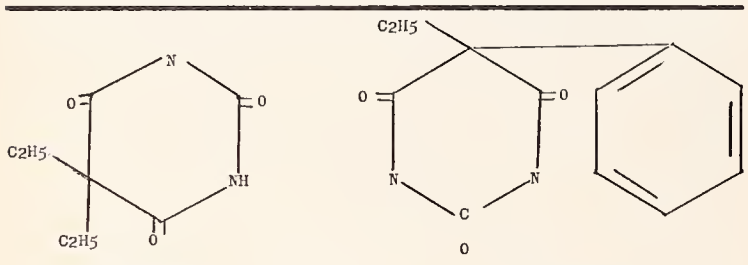
GLUTETHIMIDE (DORIDEN) POISONING
Controversies In Treatment



M. DAVID BEN-ASHER, M.D.
Tucson, Arizona

"The increased use of the sleeping pill, Doriden, as a method of committing suicide, makes this article noteworthy to all physicians."

Glutethimide is a highly effective sedative, structurally similar to the barbiturates (fig. 1).



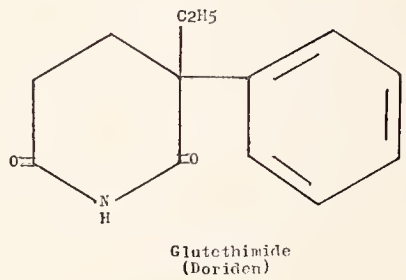


Figure 1
Structural Similarity of Barbiturates and Glutethimide.

The usual dose (0.5 gm) produces a therapeutic effect comparable to 100 mgm of pentobarbital, occurring in about 30 minutes after ingestion and lasting for 5-7 hours. It is poorly soluble in water and readily soluble in organic solvents, such as alcohol, ether and chloroform. It is metabolized by splitting of the ethyl group, yielding phenyl glutarimide, a non-toxic compound without sedative properties. Radioisotope studies have shown 80 per cent of activity in the urine and 11.8 per cent in feces. The biologic half-life is about 26 hours and the oral LD-50 dose in mice is 500 mgm per Kg.[1, 2,3]

Thesis prepared in partial fulfillment of the requirement for advancement to fellowship in the American College of Physicians.

Glutethimide was introduced into clinical practice in 1954, and by 1965 was the sixth most frequently used sedative in medical practice.[1] The first case of acute glutethimide intoxication was reported in 1955[4] and by 1966, 59 reports had been published.[5] To date, however, there is no uniform, accepted treatment of poisoning with this drug. This paper will discuss the various methods of treatment which have been recommended.

Following oral or parenteral administration, glutethimide is distributed unevenly throughout the body; it is almost completely insoluble in water, and liver and fatty tissue concentrations can be 10-25 times that of plasma. Virtually no active drug appears in the urine.[6] Two hours after ingestion of 0.25 Gms., blood levels in healthy adults are 0.1-0.2 mgm per 100cc, and 3½ hours after ingestion of 1.0 Gm they reach 0.66 mgm per 100cc. Therapeutic blood levels range from 0.1 to 0.66 mgm per 100cc. Significant narcosis is produced at 2-3 mgm per 100cc.[7] Concurrent ingestion of other sedatives and/or alcohol will potentiate its effects. In addition to various levels of coma, patients with glutethimide intoxication may have evidence of autonomic blockade with pupillary dilatation, hypoventilation without depression of the respiratory rate, and a tendency to apnea. There is a definite relationship between dose ingested and duration of coma; 0.2 Gm per Kg will result in coma for 96 hours.[3] The lethal dose of glutethimide is between 10 and 20 grams, but patients have recovered after ingestion of as much as 35 grams and died after taking as little as 7.75 grams.[5]

In 1956, Sheppard and associates developed a procedure for determination of glutethimide and its metabolite, x phenyl glutarimide in the urine.[8] This method had two major drawbacks to clinical application. It took two days to run, and the relevance of urine concentrations to clinical status was certainly subject to question. In 1960, Goldbaum et al introduced a spectrophotometric method for determination of serum levels, but this still took four hours.[9] A method taking only 1½ hours was reported by Dauphinais and McComb in 1965,[10] and in 1966 a rapid chromatographic method taking only one hour was reported by Korzun and co-workers.[11] Blood level determination by these more rapid methods may now have more clinical significance. Because of the quantities of drug and metabolite which are sporadically released into the circulation from fat stores or enterohepatic recycling, however, a blood level at a given time does not necessarily indicate impending recovery, and must be interpreted in view of the patient's size, amount ingested and clinical status. Many a clinician, the author included, has seen a patient with gluthethimide poisoning apparently doing well suddenly regress itno a serious state. This is felt to be due to increase of circulating drug levels by the pathways mentioned above.

Vigorous treatment of glutethimide intoxication is strongly recommended,[12] and certain basic principles of management are uniformly accepted by all authorities. After placement of an adequate airway, gastric lavage should be done to remove any tablet residue. Patients have become apneic during gastric intubation, and this procedure should be discontinued immediately if this occurs. Mann recommends lavage with castor oil,[13] both because the drug will dissolve readily in the oil, and the bowel irritation of the castor oil will rapidly propel the dissolved drug through the gastrointestinal tract without time for much further absorption. Ginn and co-workers found large boluses of glutethimide in the stomachs of patients at autopsy, presumably due to both the poor water solubility and anticholinergic effects of the drug. Using large volume castor oil lavages and leaving 15-30cc in the stomach, they had not had a death in 2 years and have not had to resort to dialysis over this period of time.[36] Adequate ventilatory support and careful fluid and electrolyte balance should be carried out. Body temperatures should be controlled, by cooling procedures if necessary, to prevent hyperthermia. Analeptic drug stimulation is generally frowned upon, but Schreiner's use of bemigride and Schleisser's use of methylphenidate will be presented below as a possible exception to this rule. Antibiotics are only used when infection or aspiration occurs, and not for routine prophylaxis. Shock prophylaxis consists of careful patient observation and prompt correction of deficient intravascular volume. Frequent turning of the patient will help prevent thrombosis and decubiti.[14]

Ancillary methods of treatment reported have included the use of bemigride, methylphenidate, osmotic diuresis, peritoneal dialysis, hemodialysis and combinations of these procedures. Various opinions regarding the relative efficacy of these adjunctive maneuvers form the controversy which will now be discussed.

Schreiner and associates noted the structural similarity of bemegride (Megimide, B-methyl B-ethylglutarimide), a stimulant used as a barbiturate antidote, and glutethimide (Doriden, x ethyl- x phenylglutarimide). (fig. 2). They reported 6 cases in which a satisfactory clinical response to bemigride occurred independent of the blood glutethimide levels.[15] They outlined a regimen of titration of patients with bemegride, giving 50 mgm intravenously every 10-15 minutes and maintenance doses as needed to keep a "safe" state of anesthesia. Hemodialysis was recommended if more than 1500 mgm of bemegride was required to lighten anesthesia.

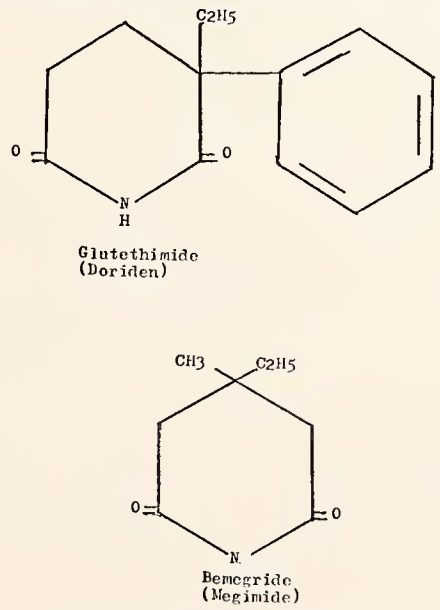


Figure 2
Structural Similarity of Bemegride and Glutethimide.

In 1966, Schleissner used supportive measures and methylphenidate (Ritalin), a central nervous stimulant,[16] in the successful treatment of

a patient who had taken "handfuls" of glutethimide in a suicide attempt. Neither drug, however, has been uniformly recommended in subsequent reports. Although he was fairly enthusiastic about bemegride in 1958, Schreiner did not include it as part of his regimen in his group's excellent review of the problem in 1962.[12]

Hemodialysis was part of the treatment recommended in Schreiner's 1958 report, but did not become a prominent part of management until the 1960's.[17, 18, 19] This time lapse reflects the relative unavailability of extra-corporeal dialysis equipment and trained personnel until that decade. Studies on patients treated with both peritoneal[20] and hemodialysis[7] indicated that the portion of total ingested dose actually removed during the procedure was minimal. This was felt to be mainly due to the high lipid, water partition coefficient of the drug. Short-acting barbiturates also have this coeffidient, and in 1964 Berman and Vogelsang[21] demonstrated enhancement of removal of short-acting barbiturates from the circulation by peritoneal dialysis by adding albumin to the dialysate fluid. This method was not, however, been successfully applied to glutethimide intoxication.

In 1965, Shinaberger and co-workers reported studies done using lipid dialysate in both peritoneal and hemodialysis in dogs which had been given glutethimide.[22] Hemodialysis against lipid for three hours resulted in a clearance of glutethimide 3.43 times greater than dialysis against a standard bath: blood glutethimide concentration ratios were increased further over 6 hours time. This advantage of lipid dialysate was equal with both cottonseed and olive oil. Adding lipid emulsion (Lipomul) to a standard peritoneal dialysis solution (Inpersol) increased extraction of glutethimide more than five-fold over the standard bath dialysis. Common, routine use of fat emulsions in dialysate baths, both hemo- and peritoneal, has met with technical difficulties and at this time is not frequently done.

Although studies of the use of the peritoneal membrane and cavity for dialysis had been reported as early as 1920,[23, 24] widespread use of this procedure did not appear until the late 1950's, when the work of Doolan[25] and others popularized it. Over the next few years, production of prepared balanced solutions, prepackaged, sterilized tubing with or without indwelling trocars and pre-packaged disposable starter kits brought peritoneal dialysis within the capability of almost every hospital in the country. The procedure itself is simple, has few contraindications, can be initiated quickly and is easily monitored by properly trained nurses. There have been numerous reports of glutethimide poisoning successfully managed with peritoneal dialysis;[19, 26, 27, 20, 29] this writer has had excellent results in the treatment of six cases with this method. Some authors, however, feel that the amounts of drug removed by peritoneal dialysis are insignificant, and that it has absolutely no value in the management of glutethimide poisoning.[5, 30] The ready availability and ease and rapidity of initiation of the procedure certainly makes it an extremely attractive one; perhaps further work with lipid emulsions in dialysate solutions (vide supra, 22) will result in increased effective use of this technique.

Forced osmotic diuresis was carried out in the late 1930's using sucrose; subsequently urea and dlucose was used, and in 1948 mannitol, a physiologically inert hexadroxy alcohol, was introduced. It is quite safe, with appearance of some reversible tubular histological changes as its major side effect.[31] The use of osmotic diuresis in conjunction with alkalinization of the non-polar forms of toxins, glutethimide included, has been quite effective and, like peritoneal dialysis, is readily available in almost all hospitals in this country.[32]

The extremes of disagreement in treatment of glutethimide intoxication range from those who recommend use of all three ancillary methods: osmotic diuresis, peritoneal and hemodialysis[33] to those who feel that none of the methods add much to the management of poisoning by supportive means alone.[34, 35] In treating a patient who ingested 14 Gms of glutethimide with all three methods, DeMyttenaire and associates[33] removed 1.24 Gms with eight hours of hemodialysis, 580 mgm over 45 hours of peritoneal dialysis (70 liters of dialysate exchange) and 506 mgm over 68 hours of forced diuresis. No mention of the use of lipid dialysate was made in this report. The hourly drug elimination rate by hemodialysis was superior by ratios of 12 and 20 to 1 when compared to peritoneal dialysis and osmotic diuresis respectively. The authors recommended the simultaneous use of all three techniques in cases of severe glutethimide poisoning because the additional drug elimination achieved by summation of these three could create an advantage which might be life saving.

Acting the devil's advocate, Chazen and Cohen[35] stated that the blood glutethimide level on admission correlated poorly with both state of consciousness and duration of coma. Seventeen of their 37 patients (39 poisoning episodes) were classified as severely intoxicated (unresponsive to deep pain and hypotensive at some time during their hospital course). Five of these patients were treated with hemodialysis. Fall in blood levels were comparable in both those treated with dialysis and those treated supportively (fig. 3). Hemodialysis did not shorten the duration of coma, did not lessen complications and did not improve survival. The only two deaths in this series occurred despite hemodialysis.

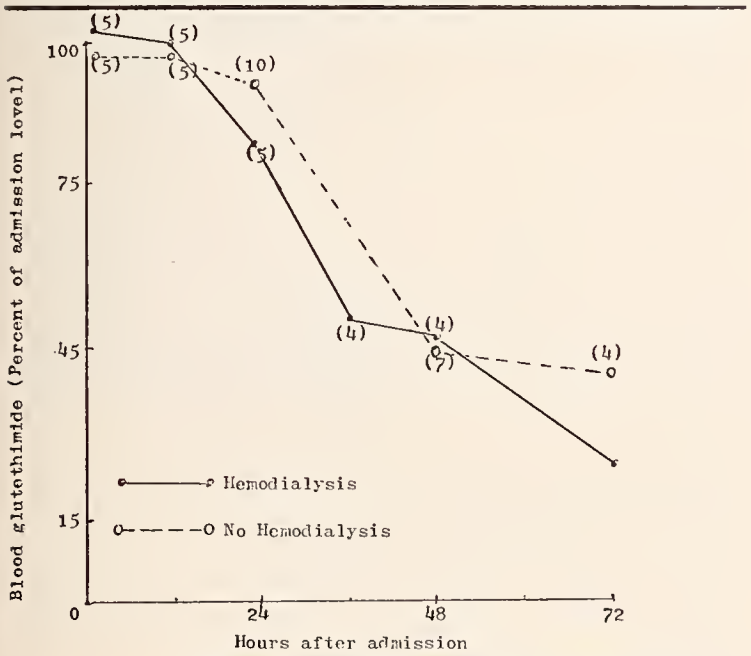


Figure 3
Blood glutethimide levels in severely intoxicated patients expressed as percentage of admission level.

SUMMARY

Glutethimide is a highly effective sedative/hypnotic drug which has achieved widespread use since its introduction in 1954. Because of its high affinity for fat and poor solubility in water, unique problems in management of poisoning with this drug are present. In addition to lavage and supportive measures, ancillary methods of treatment including the use of castor oil, analeptics, hemodialysis, peritoneal dialysis and osmatic diuresis alone or in different combinations have been recommended by various authors. Others, equally enthusiastic, have felt that none of these ancillary methods have any advantage over supportive treatment alone. Because of the critical condition in which many of these patients present themselves, it is highly unlikely that a controlled prospective study comparing various methods of management is in sight. Continued future controversy is anticipated until such time as a drug or method which can prevent fat storage, remove fat-bound material and inactive circulating drug has been developed.

BIBLIOGRAPHY

1. Goodman, L. S. and Gilman, A.: The Pharmacological Basis of Therapeutics, MacMillan Co., New York, 1965 Pp. 137-139.
2. Maher, J. F. and Schreiner, G. E.: The clinical dialysis of poisons. Trans. Am. Soc. Artif. Int. Organs 11:349, 1965.
3. Maher, J. F. and Schreiner, G. E.: The dialysis of poisons and drugs. Trans. Am. Soc. Artif. Int. Organs 13:369, 1967.
4. Gerster, P., Scholer, H. and Zuger, M.: Klinische Beobachtungen bei einem akuten Vergiftung mi -Phenyl-athylglutarimid (Doriden). Schweiz. med. Wchnschr. 85:991, 1955.
5. Medical Division, Research Department, CIBA Pharmaceutical Company, Summit, New Jersey: Acute overdosage of Doriden. Personal Communication, 1967.
6. Keberle, H., Hoffman, K., and Bernhard, K.: The metabolism of Glutethimide (Doriden). Experientia 18:105, 1962.
7. Kier, L. C., Whitehead. R. W. and White, W. C.: Blood and urine levels in glutethimide (Doriden) intoxication. J.A.M.A. 166:1861, 1958.
8. Sheppard, H., D'Asaro, B. S. and Plummer, A. J.: Detection of glutethimide (Doriden) and metabolites in dog urine. J. Am. Pharm. Assn. 45:681, 1956.
9. Goldbaum, L. R., Williams, M. and Kopanyi, T.: Determination of glutethimide in biological fluids. Anal. Chem. 32:81, 1960.
10. Dauphinais, R. M. and McComb, R.: A specific procedure for serum glutethimide (Doriden) determination. Am. J. Clin. Path. 44:440, 1965.
11. Korzun, B. P., Brody, S. M., Keegan, P. G., Luders. R. C. and Rehm, C.R.: Rapid chromatographic method for the identification and estimation of glutethimide (Doriden) in blood. J. Lab. Clin. Med. 68:333, 1966.
12. Maher, J. R., Schreiner, G. E., and Westervelt, F. B. Jr.: Acute glutethimide intoxication. Amer. J. Med. 33:70, 1962.
13. Mann, J. B.: Sedative overdose. Audio Digest (Int. Med. 16:19, 1969.
14. Pedersen, B. S. and Petersen, P. N.: A resuscitation center for acute poisoning, Danish Med. Bull. 12:145, 1965.
15. Schreiner, G. E., Berman, L. B., Kovach, R. and Bloomer, H. A.: Acute glutethimide (Doriden) poisoning . . . the use of bemegride (Megimide) and hemodialysis. Arch. Int. Med. 101:899, 1958.
16. Schleissner, L. A.: Glutethimide Intoxication. Calif. Med. 105:41, 1966.
17. Phillips, W. C. and Bortin, M. N.: Massive glutethimide (Doriden) intoxication; successful treatment with dialysis. Wis. Med. J. 64:440, 1965.
18. Esmond, W. C. and Straugh, M.: Successful treatment of a severe glutethimide (Doriden) poisoning with an optimized artificial kidney (Dialung). Investigative Urol. 3:512, 1968.
19. Kurtz, G. G., Ulrich, F. M., Morusi, H. J. and Vaamonde, C. A.: Hemodialysis during pregnancy. Arch. Int. Med. 118:30, 1966.
20. Barbour, B. H.: Peritoneal dialysis in the management of dialyzable poisons. Clin. Res. 8:114, 1960.
21. Berman, L. B. and Vogelsang, P.: Removal rates for barbiturates using two types of peritoneal dialysis. N. Eng. J. Med. 270:77. 1964.
22. Shinaberger, J. H., Shear, L., Clayton. L. E., Barry, K. G., Knowlton, M., and Goldbaum, L. R.: Dialysis for intoxication with lipid soluble drugs; enhancement of glutethimide extraction with lipid dialysate. Trans. Am. Soc. Artif. Int. Organs. 11:173, 1965.
23. Clark, A. J.: Absorption from the peritoneal cavity. J. Pharm. and Exp. Therap. 16:415. 1920.
24. Putnam, T. J.: The living peritoneum as a dialyzing membrane. Am. J. Physiol. 63:548. 1922.
25. Doolan, P. D., Murphy, W. P. Jr., Wiggins, R. A., Carter, N. W., Cooper, W. C., Watten, R. H., and Alpen, E. L.: An evaluation of intermittent peritoneal lavage. Am. J. Med. 63:831, 1959.
26. Ellis, K. G., Lea, R. G. and Drysdale, R. D.: Peritoneal dialysis. Can. Med. Assn. J. 88:928, 1963.
27. Flannigan, W. J., Henderson, L. M. and Merril, J. P.: The clinical application and technique of peritoneal dialysis. G.P. 28:98, 1963.
28. Anderson, W. E.: Peritoneal dialysis in private practice: Current Therap. Res. 8:598, 1966.
29. Frey. W. G.: Acute glutethimide poisoning managed by peritoneal dialysis. J. Maine Med. Assn. 59:3, 1968.
30. McDonald, D. F., Greene, W. M., Kretchmar, L. and O'Brien. G.: Experience in acute glutethimide (Doriden) intoxication; superiority of extracorporeal dialysis over peritoneal dialysis. Invest. Urol. 1:127, 1963.
31. D. Scalia, V. A., Mautner. W., Cohen, J. A., Levitt, M. F., Churg, J. and Yunis, S. L.: Tubular alterations produced by osmotic diuresis with Mannitol. Ann. Int. Med. 63:767, 1965.
32. Ben-Asher, M.D.: Forced diuresis and alkalinization of urine. Proceedings of the Arizona poisoning control seminar. Scottsdale, Arizona, May 3, 1966. Pp. 45-47.
33. De Myttenaere, M., Schonfield. L. and Maher. J. F.: Treatment of glutethimide poisoning. J.A.M.A. 2380:85, 1968.
34. Muttenlocher, P. R.: Accidental glutethimide intoxication in children. N. Eng. J. Med. 269:38. 1963.
35. Chazen. J. A. and Cohen, J. J.: Clinical spectrum of glutethimide intoxication; hemodialysis re-evaluated. J.A.M.A. 205: 837, 1969.
36. Ginn, E.: Personal communication, 1970.

REGIONAL EMERGENCY MEDICAL SERVICES PROGRAM

The Highway Safety Act of 1966 includes sixteen safety standards which must be implemented by each state as part of its Comprehensive Highway Safety Program. Not only must the State have such a program, but also political subdivisions of the State which include cities, counties, school districts, and regional groups. One of the sixteen standards developed under this Act deals with emergency medical services requiring that a program be established in each state to assure that persons involved in highway accidents receive prompt medical care by trained and qualified personnel.

The Emergency Medical Services Committee of Arizona was founded by Governor Jack Williams and includes doctors, nurses, educators, law enforcement people, comunications experts, ground and air ambulance operators, among others. The Chairman is Sister Mary Ralph, the highly competent Supervisor of Emergency Services at St. Joseph's Hospital and Medical Center. Members of the Arizona Medical Association are active participants on the Governor's Committee or Subcommittee including Doctors Earl Baker (Phoenix), Gordon Ewy (Tucson), Herbert Fredell (Flagstaff), Harry Hale (Phoenix), John Hildebrand (Flagstaff), S. V. Hilts (Tucson), Howard Johnston (Phoenix), E. B. Jolley (Bisbee), Louis Kossuth (Phoenix), Robert Leonard (Phoenix), Henry Limbacher (Tucson), D. W. Melick (Tucson), David Ostrolenk (Yuma), Donald Schaller (Phoenix), James Schamadan (Phoenix), Jacob Sobol (Phoenix), William Sullivan (Safford), William Trier (Tucson), Dale Webb (Yuma), Peter Whitney (Tucson), and MacDonald Wood (Phoenix).

Bruce Robinson, Executive Director of the Arizona Medical Association, is a member and served as an effective host in connection with an outstanding and effective meeting of this statewide group in December, 1970, in the home of the Arizona Medical Association. From this effort effective regional medical services should follow, with active participation of the health professions, and with funding for the upgrading of such services. Further information is available via the Arizona Medical Association or the Office of the Governor's Highway Safety Coordinator, Capitol Annex West, 1688 West Adams, Phoenix, Arizona 85007.

John R. Green, M.D.

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President's Page



The concept of there being nothing new in this world certainly applys here for, technically, the paramedic has always been with us in some capacity.

In the ancient writings of the Bible, Koran, and Talmud, as well as the history of Egypt, China, Greece, Persia, and Rome, mention is made of the ones that aid the physician in his work. This has probably been true in all times, or at least since the concept of medicine was born, for the physician has always had a physician assistant. Now, all of a sudden, the world, or at least the United States, has discovered the magical word 'paramedic' and some even imply this is going to solve all our manpower problems.

Probably the first specifically trained paramedic was the nurse, and as we know her today, her responsibilities vary greatly. They may require the decision of the visiting nurse or the intensive and cardiac care nurse. The nurse of fifteen to twenty years ago is being replaced by the L.P.N., and the R.N. of today is a University trained Supervisor or Educator. One gets the impression that the University nurse is not being trained for patient care except in highly complex areas.

As the spoken and written word has been handed down, it is a well know fact that armies and navies have had someone specifically designated to take care of the sick and wounded. These battlefield people are known as Aid men, Corps men, Medics, etc. This is the type of person many people feel is the paramedic of the future and shouldn't be lost when he leaves the service. Many feel that only some additional training is necessary for civilian utilization.

Legislation regarding the paramedic will be introduced in the upcoming session of the State Legislature and a rough version of a bill has already been drafted. If you have any knowledge or wish to help with this legislation, please let the Arizona Medical Association Headquarters know of your desire.

Some universities are already engaged in the training of the paramedic and should ensure to a great extent the quality and quantity of the graduate. Some states are actively engaged in the preliminary application of this physician to the healing arts while others are just beginning to realize what we are being asked to participate in.

It must be realized that as the program is developing we will be responsible for all acts of these people, as they will be solely and only under our direction. We should cooperate in all respects so the program can develop as needed — so that the physician who feels the need for the paramedic can utilize him. Realize, this is a voluntary program and you need participate only if you have the need. The program, when established with excellent guidelines, can be a success, but only with your help and guidance.

Fred H. Landeen, M.D.
President

Dean's Page

FAMILY MEDICINE AT THE UNIVERSITY OF ARIZONA

The College of Medicine early accepted the importance of educating physicians with strong orientation to the family and the community. The catalog of the college states "the college also recognizes the importance of comprehensive medical care and the 'family physician'. Through the Department of Community Medicine and the Neighborhood Health Center the students and faculty work together in the continuing and comprehensive care of patients in the Model Cities area of Tucson. . . . At graduation the student will be broadly educated in the science and humanism of medicine and ready for the final training period which in turn will prepare him for a career in family practice or in a medical specialty."

When the Department of Community Medicine was activated in the summer of 1968, its first task was to develop a family health center as a teaching resource. The El Rio - Santa Cruz Neighborhood Health Center is now in operation with the aim of providing comprehensive, family-centered care to a defined population. The medical staff consists of primary physicians (family practitioners, internists, and pediatricians) with appropriate arrangements for specialty back up. In addition, there is a fine staff of nursing personnel, laboratory and x-ray technicians, family health workers and others. The family health workers are selected from the neighborhood and trained in home nursing and other skills to support the professional personnel. The physicians work in teams with nurses and family health workers. Each of the seven teams is responsible for a geoprahic area. Students will shortly be assigned to these teams for experience in caring for patients, use of community resources and evaluation and improvement of environmental factors that impact on health.

In addition, the Department of Community Medicine will operate the University Hospital's emergency services. Recognizing that 60-70% of "emergency" patients do not have true emergency problems but come to the hospital because for one reason or another they have no personal physician or cannot find one, the emergency service provides an excellent opportunity for training in primary care. To complement this experience, supervised preceptorships with family practitioners in the community have already begun, and a rural location for patient and community care is under development. These learning experiences will be coordinated and enriched with courses in epidemiology, human behavior, environmental medicine and others.

Once these resources were developed and coordinated it became possible to develop Family Practice residency. We expect this program to qualify physicians for examination by the American Board of Family Practice. The Department of Community Medicine has set up a Section of Family Practice to coordinate the teaching effort and it will work closely with family practitioners in Arizona in effectuating the program.

Although the College looks forward to making its entry in the family medicine scene, careers in family medicine have not proven popular with medical students. Indeed, the vast majority of pre-medical students — while still in college — have apparently already made their decision to specialize. Whether this is because the family physician is too often overworked and under-rewarded, or because the student feels insufficient in trying to embrace a reasonable depth of medical knowledge in several fields at once is uncertain.

Among the alternatives that may now be considered by future family physicians is the augmentation of medical group practices in which the family Physician is an integral and essential element in the provision of health care. A Family Physician in such a setting can realize his full professional potential very well. In the less populated areas of Arizona, creation of small medical groups with sufficient resources to deliver comprehensive health services may prove very attractive to the new physician and his family.

The future of Family Practice, therefore, is dependent both on excellent training programs and the creation of optimal conditions of practice. The University cannot solve the entire problem alone but is confident that, with the active support of the Arizona Medical Association, much progress can be made in both.





ARIZONA GOVERNOR, NEWCOMEN SOCIETY, HONOR BLOOD SERVICES

Arizona's Attorney General Gary K. Nelson (right) presents Citation of Merit from Governor Jack Williams to Dr. T. Tyle Carr, Chairman of the Board of Trustees for Blood Services. W. Quinn Jordan (left), President of Blood Services and the BSP Insurance Company of Phoenix, Arizona and John I. Yellott, Chairman of the Arizona Committee of the Newcomen Society in North America observe the ceremony which took place during a dinner meeting at the Westward Ho Hotel in Phoenix.

HOBBY SHOW COMMITTEE, 1971 STATE MEDICAL CONVENTION

Big things are expected of the Women's Auxiliary Hobby Show at the Arizona State Medical Convention to be held in Phoenix, April 29th through May 3rd, 1971.

For the first time in the show's long history, a special "theme" will be carried out, with a special award going to the exhibit best exemplifying that theme. The show will feature a "Southwestern" theme, and exhibitors will be urged to submit works featuring the culture, history and art of the Southwest.

All Arizona M.D.'s and their wives are being encouraged to show their favorite collections, or exhibitions of skill, in order to make this the finest show ever. Only works not previously shown in this Hobby Show will be eligible for exhibition.

Dozens of ribbons will honor each exhibit class (breakdowns of different classes to be announced at a later date), as well as the Sweepstakes Award, and a brand new Theme Award.

When making original Christmas gifts this year, consider making a duplicate to be shown at the important women's Auxiliary Hobby Show at the State Convention in the Spring. Co-chairmen Rheta Sawrey and Wink Blair are determined to make next year's show a real treat for all.

Of special help to exhibitors will be auxiliary representatives in each county to assist participants in the handling of their show applications and exhibits.

Following is a partial list:

Maricopa County: Mrs. George Scharf, 6301 N. 20th St., Phoenix, Phone: 955-8046.

Yuma County: Mrs. Franklin Johns, 2355 Chico Lane, Yuma, Phone: 783-5077.

Yavapai County: Mrs. Francis Carr, 1244 Overstreet Drive, Prescott.

BOARD OF MEDICAL EXAMINERS
STATE OF ARIZONA

The following doctors of medicine were issued licenses to practice medicine in the State of Arizona, on October 10, 1970:

5919 ABRAHAM, Henry David (PD), 332 S. Freeway, Tucson, Arizona

5920 ALBANO, Patrick (ORS), 1415 Springfield Cir., Augusta, Georgia

5921 ALLEN, Jr., Louis Sutherland (GP), Sage Memorial Hospital, Ganado, Arizona

5922 ARKO, Joseph Charles (IM), St. Joseph's Hospital, Phoenix, Arizona

5980 BAKER, Charles Jones (PD), Ariz. State Univ., SHS, Tempe, Arizona

5923 BAKER, Virginia Hamilton (GP), H. R. Baker & Sons, Elgin, Arizona

5981 BANKS, Samuel W. (ORS), 222 E. Chestnut St., Chicago, Illinois

5982 BETTAG, Otto Louis (ADM-PUD), 326 Prospect Ave., Elmurst, Illinois

5924 BETZ, Thomas George (GP), 332 S. Freeway, Tucson, Arizona

5983 BIERBOWER, Robert Leslie (GP), Shelby, Nebraska

5925 BOND, Winkler Devere (P), 200 Seven Oaks Rd., Durham, North Carolina

5984 BORKENHAGEN, Robert Herbert (OTO), 912 Verne Lane, Flossmoor, Illinois

5985 BOYER, Paul Kenneth (CD), 4050 La-Cadena Rd., Tucson, Arizona

5926 BRAINARD, William Chester (ORS), U.S. Reynolds Army Hosp., Fort Sill, Okla.

5927 BRENNAN, Henry George (OTO-PS), 6947 Trolley Way, Playa Del Rey, California

5928 BRESSLER, Rubin (IM), Univ. of Ariz., Coll. of Med., Tucson, Arizona

5929 BROSE, Brenda Rugh (OPH), 1255 N. Sandburg Terr., Chicago, Illinois

5986 CALHOUN, Lois Evelyn Friedl (PD), Copper Queen Hosp., Bisbee, Arizona

5930 CAPP, Michael Paul (R), Univ. of Ariz., Coll. of Med., Tucson, Arizona

5931 CARR, Geoffrey Oliver (PD), 11376 Loch Lomond Rd., Los Alamitos, Calif.

5987 CONLEY, Francis William (IM), 460 Jean Duluth Rd., Duluth, Minnesota

5932 COY, John Ross (R), St. Joseph's Hosp., Phoenix, Arizona

5933 CREASMAN, John Paul (OPH), 10610 Bordley Dr., Houston, Texas

5934 CROSBY, Jr., Uel Doyle (OBG), 1550 E. Indian School Rd., Phoenix, Arizona

5988 DAVIS, Harry John (GP), 8651 Joshua Tree Lane, Scottsdale, Arizona

5989 DENT, Duke Arthur (GP), 100 Demini Dr., Charleston, W. Virginia

5990 DORMAN, George William (PD-S), 3411 N. 5th Ave., Phoenix, Arizona

5935 EATON, Crosby John (OBG), 510 Huntington Dr., Ann Arbor, Michigan

5991 EGGER, Jr., John F. (CRS), 3915 St. Charles Ave., New Orleans, Louisiana

5936 ERICKSON, Charlotte Christine (IM), 832 Iris Ave., Sunnyvale, California

5992 FISCHER, Willard G. (GP), 49 Ruskin Rd., Eggertsville, New York

5937 FLANNERY, John Charles (P), 416 Stanyan St., San Francisco, California

5938 FRAZIER, Jr., Robert Edward (P), 232 Crestvale Trailer Park, Rt. 4, Columbia, Mo.

5939 FRIEDLAND, Jack Arthur (GS), 2626 Osage, Glendale, Arizona

5940 GAMES, Jack Edward (P), 7407 – 42nd Ave., N.E., Seattle, Washington

5941 GELLER, Robert Dennis (IM), 4402 N. 7th St., Phoenix, Arizona

5942 GEORGE, Walter Edmond (ORS), 116 Tarpon Ave., Galveston, Texas

5993 GILLESPIE, Robert Walter (GS), 4410 South St., Lincoln, Nebraska

5943 GOLDBERG, Stanley Julian (PDC), Univ. of Arizona Hosp., Tucson, Arizona

5944 GREEN, Wesley Edward (IM), St. Joseph's Hosp., Phoenix, Arizona

5994 GRUBB, Robert Alvin (GP), 108 Susquehanna Ave., Selinsgrove, Pa.

5945 HAMMERSCHLAG, Carl Allen (P), 801 E. Indian School Rd., Phoenix, Arizona

5946 HEATON, Jr., John Wesley (IM), 2601 E. Roosevelt St., Phoenix, Arizona

5995 HIRSCH, Sidney (GS), 501 Broadway, Cedarhurst, New York

5947 KEARY, Frank Vincent (IM), Veterans Adm. Hosp., Tucson, Arizona

5948 KERR, Charles Morgan (P), Univ. of Ariz., Coll. of Med., Tucson, Arizona

5996 KOZLINSKI, Anthony Edward (GP), 22321 Frazho Rd., St. Clair Shores, Michigan

5949 KRIEGSFELD, Barry Alan (NS), St. Joseph's Hosp., Phoenix, Arizona

5997 LEVINSON, Daniel Orin (GP), Univ. of Ariz., Coll. of Med., Tucson, Arizona

5950 LORANCE, William Garrison (GP), 3925 Clayton Ave., Los Angeles, California

5998 McCLEARY, Ezekiel Stewart (ADM), 340 Harrison Rd., Wallingford, Conn.

5951 McCONKIE, John Houck (OTO), 832 Iris Ave., Sunnyvale, California

5999 MEYERS, Sanford Harold (P) 66 Park Circle, Eggertsville, New York

6000 MICKEY, Rhoda May (PD), Sage Memorial Hosp., Ganado, Arizona

5952 MILLETT, Jr., Fay Edward (OPH), 10272 Saigon Dr., El Paso, Texas

5953 MINKIN, Ronald Blaine (D), 2801 S. King Dr., Chicago, Illinois

5954 NAGLE, Duane Waldemar (OTO), 1101 5th St. North, Fargo, North Dakota

5955 NASH, Robert Alan (P), 452 S. Harrison, Olathe, Kansas

5956 NEWMAN, Henry Albert (U), 12611 N. 103rd Ave., Sun City, Arizona

5957 NICHOLS, Jr., Andrew Wilkinson (IM-PH), Univ. of Ariz., Coll. of Med., Tucson, Arizona

6001 OLSEN, Arthur Raymond (GP), 616 Lake St., Fort Morgan, Colorado

5958 ORTIZ, Peter Raphiel (PM), 100 E. 4th St., Scottsdale, Arizona

5959 PARISH, Jr., Havner Hurd (U), 103 Cone Dr., Selma, Alabama

6002 PHELPS, McKinnie Lee (ANES), 765 Humboldt, Denver, Colorado

5960 RAKER, Stanley Kay (GP), Good Samaritan Hosp., Phoenix, Arizona

6003 RAND, Harry (P), 199 Temple St., West Newton, Massachusetts

5961 ROESER, Waldomar Monroe (ORS), 16-A Forsythe, Fort Riley, Kansas

6004 RUBEN, Joseph Eugene (ANES), 2323 N. Central Ave., Phoenix, Arizona

6005 RUBEN, Malcolm Edward (U), 141 Lemoyne Ave., Washington, Pa.

5962 RUSSMAN, Burton Alan (OPH), 2835 Sheridan Pl., Evanston, Illinois

5963 RYAN, Michael Edward (IM), 2559 E. 7th Ave., Flagstaff, Arizona

6006 RYON, William Garrison (GP), Arizona State Hosp., Phoenix, Arizona

6007 SCHNEIDER, David Hirsh (U), 19913 Shelburne Rd., Cleveland, Ohio

5965 SCHREIBER, Saul Naphtali (ORS), 1550 E. Indian School Rd., Phoenix, Arizona

5966 SEBALD, John Roman (ORS), 204 Meray Blvd., Mankato, Minnesota

5968 SLOTT, Robert Irwin (IM), 2934 W. Summerdale Ave., Chicago, Illinois

6008 SMITH, Robert Nelson (ANES), 3424 Gallatin Rd., Toledo, Ohio

5969 SPOERL, George Henry (OPH), 960 Mulford St., Evanston, Illinois

6009 STAUFFER, Neven Perry (GP), Briar Lane, Rt. 4, Millersburg, Ohio

5970 STEEN, William McIlvain (GP), 132 A West Maley St., Willcox, Arizona

5971 STRAND, Richard Collins (P), 100 South St., Sausalito, California

6010 STREICHER, Karl Jacob (OPH & OTO), 2692 Walnut Blvd., Ashtabula, Ohio

6011 STROY, Herbert Eric (GS - GP), 820 S. Jackson, Osceola, Iowa

5972 TANQUIST, Jr., Edwin John (GP), 804 Douglas, Alexandria, Minnesota

5973 TAPP, Jr., Jesse Washington (GPM), Univ. of Ariz., Coll. of Med., Tucson, Arizona

5974 THIELE, David Alden (P), 3868 Scadlock Lane, Sherman Oaks, California

5975 TOCHTENHAGEN, Jr., Samuel Ernest (IM), 512 N. State St., Girard, Ohio

5976 URICH, Vernon Charles (U), 9338 Burning Tree Dr., Grand Blanc, Michigan

6012 WAGNER, William F. (GP), Box 416, Tombstone, Arizona

5977 WALINSKI, Thomas (GP), 2619 Densmore Dr., Toledo, Ohio

5978 WALKER, Marion Lavelle (GS), St. Joseph's Hosp., Phoenix, Arizona

5979 WHITE, Thomas Patrick (GP), 6025 N. 20th Ave., Phoenix, Arizona

6013 WISE, Jr., A. Walter (IM), 1304 - 42nd Ave., Rock Island, Illinois

6014 WRIGHT, Arthur Francis (GP), 2230 E. Lincoln Dr., Phoenix, Arizona

6015 WRIGHT, Gilbert Lawrence (GS), 2841 Floribunda Dr., Salt Lake City, Utah

Letters to Editor

Fred H. Landeen, M.D.
Pres. Arizona Medical Association
810 West Bethany Home Road,
Phoenix, Ariz. 85013

Dear Fred:

Just finished reading your President's page. I am in complete agreement with you on much that you have to say. I do, however, feel that I have a right to practice my profession as I see fit. I do not feel like a governmental utility but rather as a private citizen to do a business in which I feel I am best qualified. Therefore, I feel it important to stress the single fact that I am in medicine not only to help my fellow man but to be selective in those that I wish to help.

I think it behooves me to say that I also contribute much of my time to free medical care, i.e., the Maternal Health Care Center, Planned Parenthood and free deliveries for St. Elizabeths patients. Many hours a day, as I am sure you are aware, are spent in free medicine for those who cannot otherwise afford private care.

I feel this should be stressed through our representatives in Congress. I do not see that it is my responsibility to provide health care; however, if the government wishes to supply health care let them then draft doctors into that form of service, put them into public health hospitals and clinics and provide the type of care that they wish these people to have. My patients want my service, my patients pay for my service, my patients respond to my service.

Sincerely,
Robert J. Oliver, M.D.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

LEGISLATIVE COMMITTEE

Meeting of the Legislative Committee of the Arizona Medical Association, Inc., held Sunday, October 18, 1970 at 810 W. Bethany Home Road, Phoenix, Arizona, convened at 10:18 a.m., Richard O. Flynn, M.D., Chairman presiding.

MINUTES

The minutes of the meeting of February 1, 1970 were approved as distributed.

Specialty Society Representatives

Dr. Flynn introduced the representatives from the various specialty societies and asked them to comment on any legislative activities that they felt would be helpful to the Association.

Arizona Radiological Society

Marion A. Jabczenski, M.D., presented the following resolution:

INSURED AMBULATORY DIAGNOSTIC BENEFITS

WHEREAS, medical diagnosis is an integral part of the practice of medicine and diagnostic services are physicians' services, and

WHEREAS, the provision of so called "pre-admission testing" by Blue Cross Plans involves provision of diagnostic medical services to ambulatory patients, and

WHEREAS, provision of pre-admission testing under hospital care insurance limits the site of service to the hospital and payment for this service to the hospital, and

WHEREAS, these restrictions discriminate against the independent practice of radiology by physicians in offices and in hospitals, and

WHEREAS, the insurance of medical benefits is the purpose of Blue Shield Plans and commercial medical care insurers, and

WHEREAS, provision of insured ambulatory diagnostic benefits eliminates some medically unnecessary occupancy of hospital beds, and

WHEREAS, ambulatory diagnostic benefits are desired by patients, have been recommended by spokesmen for government, labor and management, and will be made available through pre-payment.

THEREFORE, BE IT RESOLVED, that the House of Delegates of the Arizona Medical Association requests and urges Blue Shield Plans and other insurers of physicians' services in Arizona to aggressively extend provision of ambulatory benefits to those insured, and

BE IT FURTHER RESOLVED, that the Arizona Medical Association notes that provision of ambulatory diagnostic benefits by Blue Cross and insurers of hospitalization restricts patients and physicians in freely selecting where these medical services will be accomplished and by whom.

A motion to have this resolution introduced in the

House of Delegates by this committee failed and the matter was referred to the Medical Economics Committee for study.

Arizona Pediatric Society

John K. Kerr, M.D., indicated that his society was still very interested in keeping PKU testing out of legislation. He indicated that they are supporting a voluntary program in most hospitals in the state. Dr. Kerr also indicated they are very interested in the development of the new physician's assistant or pediatric assistant.

Arizona Society of Allergists

Howard M. Purcell, Jr., M.D., reported that his society had no current legislative problems.

Arizona Society of Otolaryngology

Otto Shill, M.D., reported that their society was very active in getting H.B. 62, dealing with the licensing of hearing aid dealers enacted. It was indicated that they would like the association to review the regulations which were currently being promulgated. Dr. Flynn indicated that the Association would be most happy to assist.

Max L. Wertz, M.D., indicated that they were working on a state wide hearing conservation program and would appreciate ArMA backing.

American College of Surgeons — Arizona Chapter

Max L. Wertz, M.D., indicated that the College of Surgeons are not sponsoring any specific bills at this time.

Arizona Academy of General Practice

Walter V. Edwards, M.D., expressed the concern of the academy over the lack of a department of family practice at the University of Arizona College of Medicine. He indicated that they were investigating the possibility of legislation to force the creation of such a department.

Western Orthopedic Association

Thomas H. Taber, Jr., M.D., reported no specific problems at this time.

BOARD OF MEDICAL EXAMINERS REQUESTS

FLEX Examinations

Mr. Boykin explained the BOMEX Board's desire to change the current statutes to make it possible to provide reciprocity to an applicant who has passed the FLEX examination or an applicant who has completed board eligibility requirements.

It was moved and carried to give active support to these proposals.

Expenses for BOMEX Members

The BOMEX letter of October 14, 1970 requesting "The Arizona Medical Association through its Board of Directors, that it intercede in our behalf with the State Legislature, to restore the actual cost allowance heretofore prevailing" was reviewed and discussed at some length.

No motion being forthcoming, the matter was received for information only.

PROFESSIONAL LIABILITY

Confidentiality of Hospital Medical Staff Committee Records

Definition of Malpractice

Both above bills, which were introduced this year, H. B. 52 and H.B. 278 respectively, were discussed.

It was moved and carried that these bills be conditionally approved for reintroduction, but that no immediate action be taken until the outcome of Senator Cardella's Interim Committee on Malpractice is known.

REPORTING DRUG ABUSE PATIENTS

The proposed legislation prepared by the Tucson Police Department requiring physicians to report patients who seek treatment for drug abuse was discussed. It was noted that no specific request for action was before the committee.

Received for information.

EXPERT WITNESS PANEL

Meyer Markovitz, M.D., explained for the committee a possible "expert witness panel" that would be made available to the courts in cases where expert medical witnesses were needed. The aim would be to take the physician out of the adversary role as he would be testifying for the courts and not for either side. No action requested.

Received for information.

COMMUNICATIONS

James L. Schamadan, M.D.'s letter regarding administration of intravenous solutions was read.

The committee determined that this matter could better be handled by a joint position paper and the matter was referred to the Professional Committee for the development of a position paper.

OTHER BUSINESS

Abortion

Mr. Edward Jacobson, legal counsel, reviewed the current status of the Planned Parenthood suit before the Arizona Supreme Court. He reported that the court has agreed to hear the suit and it is awaiting scheduling.

Physician's Assistants

Mr. Robinson reported that the Ad Hoc Committee on Locum Tenens and Health Manpower was actively working on the necessary legislative changes needed to make Physician's Assistants legal in Arizona. When this work is complete it will be referred back to this committee for action.

Meeting adjourned 2:32 p.m.

Edward Sattenspiel, M.D.
Secretary
Bruce E. Robinson
Executive Director

AD HOC COMMITTEE ON CONTINUING MEDICAL EDUCATION

Meeting of the Ad Hoc Committee on Continuing Medical Education of the Arizona Medical Association, Inc., held Tuesday, October 27, 1970, 810 West Bethany Home Road, Phoenix, Arizona, convened at 7:20 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting of September 22, 1970 were approved as distributed.

AMA-PHYSICIAN RECOGNITION AWARD

Dr. Stark introduced Clarke Mangun, M.D. of the Medical Education Division of the American Medical Association. Dr. Mangun outlined the goals of the program and related the various highlights and problems experienced to date.

Extensive discussion ensued on the possibility of the

Arizona Medical Association adopting the Physician Recognition Award as a standard for membership in ArMA plan with AMA's plan were discussed.

Dr. Mangun indicated that the AMA is most willing to cooperate and work with ArMA in any way feasible.

Dr. Stark summed up the meeting by saying:

> The members of the committee should study the material provided to them and give full thought as to the direction ArMA's program should be directed as it relates to some form of cooperative effort with the AMA's Physician Recognition Award program.
>
> At the same time the members should explore other approaches that would be acceptable to ArMA membership for presentation at the next meeting of the committee.

Meeting adjourned 8:52 p.m.

Edward Sattenspiel, M.D.
Secretary

PROFESSIONAL COMMITTEE

Meeting of the Professional Committee of the Arizona Medical Association, Inc., held Saturday, November 7, 1970, at 810 West Bethany Home Road, Phoenix, Arizona, convened at 1:15 p.m., Albert G. Wagner, M.D., Chairman, presiding.

MINUTES

The minutes of the meeting held December 13, 1969 were approved as distributed.

SECTION ON POISON CONTROL

Dr. Antos reviewed the letter received from Donald M. Morgan, M.D., Epidemiologist, Community Studies Pesticide Project, Department of Entomology, University of Arizona requesting our approval to survey the physicians in Arizona regarding the frequency of poisoning cases seen.

IT WAS MOVED AND CARRIED TO APPROVE DR. MORGAN'S REQUEST AND TO LET HIM HAVE THE USE OF THE ASSOCIATION'S MAILING LIST.

SECTION ON MENTAL HEALTH

Dr. Cutts reported briefly on the current status of the various mental health programs throughout the state.

Much discussion ensued around the drug abuse educational program for the schools in Arizona as proposed by Dr. Shoftstall, State Superintendent of Public Instruction.

IT WAS MOVED AND CARRIED THAT WE SHOULD REQUEST A COPY OF DR. SHOFTSTALL'S PROPOSED PROGRAM SO THAT IT CAN BE STUDIED BY THE COMMITTEE WITH THE EYE TO POSSIBLE ENDORSEMENT AND SUPPORT DURING THE NEXT LEGISLATIVE SESSION.

SECTION ON MEDICINE & RELIGION

Dr. Evans reported on several changes in the AMA's Department of Medicine and Religion. He states that the Rev. Paul McCleave has resigned and his position taken over by Mr. Arne E. Larson.

Dr. Evans reports that his Section has established the following meeting schedule:

6:30 p.m. Sept. 29 — Tuesday — Dinner — St. Joseph's Hospital. "Sex Education for Marriage."

6:30 p.m. Oct. 29 — Thursday — Dinner — St. Luke's Hospital. "Ethical Dilemmas; Beginning and End of Life."

6:30 p.m. Nov. 30 — Monday — Dinner — St. Joseph's Hospital. "The Significance of Stress."

7:00 a.m. Jan. 23 — Saturday — Breakfast — Good Samaritan Hospital. "Genetic Engineering."

7:00 a.m. Feb. 27 — Saturday — Breakfast — Good Samaritan Hospital. "The Structure of the Healing Team."

6:30 p.m. Mar. 30 — Tuesday — Dinner St. Joseph's Hospital. "Preparation for Aging."

6:30 p.m. Apr. 29 — Thursday — Dinner — St. Luke's Hospital. "How Teachable Are You." (Psychiatry vs. Religion)

6:30 p.m. May 20 — Thursday — Dinner — Beatitudes Retirement Home. "The Effects of Learning Difficulties."

Reservations are to be made to the Rev. Robert Zitlau, 942-6955, no later than two days prior to the meeting.

SECTION ON AGING & GENERAL MEDICINE

Dr. Kohl reported that he has not made Section appointments as the activities are very light and when the Section gets active, appointments will be made to meet the need.

SECTION ON ALLIED MEDICAL GROUPS

Arizona Heart Association

The letter from the Arizona Heart Association dated June 8, 1970 requesting a blanket clearance for their screening programs was discussed in-depth.

IT WAS MOVED AND CARRIED THAT DR. LINKNER BE ASKED TO DISCUSS THIS MATTER WITH DR. RICHARD O. FLYNN AND FOLLOWING THAT, PREPARE A POSITION STATEMENT ON THE MATTER. FOLLOWING PREPARATION OF THE STATEMENT IT IS TO BE CLEARED WITH DR. WAGNER AND THE EXECUTIVE COMMITTEE AND THEN TRANSMITTED TO THE ARIZONA HEART ASSOCIATION AS THEY NEED THE INFORMATION SOON.

The American Society of Clinical Hypnosis

The subject organization's letter of September 10, 1970 was discussed in detail.

IT WAS MOVED AND CARRIED THAT WE SHOULD ACKNOWLEDGE THE LETTER WITHOUT ANSWERING THE SPECIFIC QUESTIONS THEREIN. WE ARE TO STATE THAT WE WOULD BE WILLING TO INVESTIGATE AND REVIEW A MODEL BILL SHOULD THEY BE WILLING TO SEND US ONE.

SECTION ON ArMA-ASNA LIAISON AND WOMAN'S AUXILIARY ADVISOR

Dr. Payne reported that there were no major problems or plans with the ASNA at this time.

He reported that he has been in touch with Mrs. Laverne Tucker, President of the Woman's Auxiliary, who states that emphasis this year will be on Health Careers and Legislation.

SECTION ON EMERGENCY CARE

Dr. Schaller stated that there has been great activity on the state level regarding Emergency Medical Care with several different programs underway to train ambulance drivers and other paramedical people.

AMA — Sign Program

Ernest B. Howard M.D.'s letter of May 1, 1970 re-

garding standardization of Highway Directional Signs for Emergency Medical Facilities was reviewed.

IT WAS MOVED AND CARRIED THAT DR. SCHALLER PREPARE A RESOLUTION SUPPORTING THE AMA's SUGGESTIONS FOR PRESENTATION TO ArMA's HOUSE OF DELEGATES IN APRIL 1971. COOPERATION OF RELATED AGENCIES IS TO BE SOLICITED, SUCH AS, THE ARIZONA HOSPITAL ASSOCIATION, THE STATE HEALTH DEPARTMENT AND THE STATE HIGHWAY DEPARTMENT.

COMMUNICATIONS

Board of Director's Letter of October 28, 1970

The subject letter referring the matter of the development of a position paper relating to emergency administration of intravenous fluids by paramedical persons was discussed.

IT WAS MOVED AND CARRIED THAT THIS MATTER BE DELAYED UNTIL THE LEGALITY OF THE PHYSICIAN'S ASSISTANT IS FIRMED UP BY THE LEGISLATURE. IN THE MEANTIME, DR. SCHALLER WAS ASKED TO DEVELOP A SUGGESTED POSITION PAPER ON THE MATTER FOR REVIEW AND REFERRAL TO THE BOARD FOR ACTION.

Meeting adjourned 2:46 p.m.

Edward Sattenspiel, M.D.
Secretary

AD HOC COMMITTEE ON OCCUPATIONAL HEALTH

The joint meeting of the Ad Hoc Committee on Occupational Health of the Arizona Medical Association, Inc., and the Industrial Commission of Arizona, held at 2933 North Central, Phoenix, Arizona, Tuesday, November 17, 1970, convened at 10:10 a.m., Commissioner Bruce Thoeny, Chairman, presiding.

Mr. Thoeny introduced members of the Commission and Dr. Ryan introduced members of the Committee and Staff.

Dr. Ryan and Mr. Kley both commented in general regarding the background of this new Ad Hoc Committee and its role with the Industrial Commission. They both commented on the possible role and interrelationships between the Industrial Commission of Arizona, the Arizona Medical Association and the various insurance carriers.

PEER REVIEW

The use of and need for a peer review program for the Industrial Commission of Arizona was discussed from many aspects. The various ways which such a peer review committee could function were reviewed.

Following considerable comment it was agreed that Dr. Ryan would set up a Section on Peer Review within the Ad Hoc Committee on Occupational Health to which cases could be referred by the Industrial Commission at the point that they felt review of this nature would be helpful. The ICA would advise the various insurance carriers that this mechanism will be available and establish general procedural outlines as to how cases are to be brought to the Section on Peer Review.

LIAISON WITH INSURANCE CARRIERS

Dr. Ryan indicated to the Commission that the Association is most interested in developing a better liaison with insurance carriers to work out a wide variety of problems and to create a "talking" relationship that heretofore did not exist.

Mr. Thoeny indicated that members of ArMA's Committee would be invited to the next meeting which the Industrial Commission has with representatives of the insurance carriers so that there be developed a better means of communication.

PROCESSING OF CLAIMS PROCEDURE

The entire matter of the preparation and distribution of the ICA claim form was discussed. It was noted that fewer and fewer complaints are being received from physicians about the need to route the various forms to the actual carrier. This seems to be coming about as the individual physician offices are gearing themselves and getting acquainted with the various insurance carriers. It was agreed that at this time, because of the statute, no change in this method would be forthcoming and that the situation would continue to improve as the process of educating the physician's office personnel continued.

REHABILITATION OF INJURED WORKERS

Mr. Kley explained for the benefit of the committee the role that the ICA and the carriers play as far as rehabilitation work is concerned. Many questions were asked about the philosophy and the need for developing early rehabilitation programs. It was suggested that perhaps one of the functions of the Ad Hoc Committee on Occupational Health would be to conduct educational programs to gear the physician to early recognition of the fact that subsequent rehabilitation is necessary and to get the steps started toward that rehabilitation program.

CLINICAL EVALUATIONS

It was noted that group consultive evaluations seem to be on the decline and that under the new organization, the ICA per se does not require or have use for these procedures as these are done by the insurance carriers when needed. It was noted that the trend seemed to be away from group consultations toward individual specialty consultations.

FORMS REVIEW

Question of the present claim form as to its content and organization was discussed. It was noted that the present supply of ICA forms would last another six to eight months. Reprinting is not anticipated in the near future; however, it was agreed that prior to reprinting these forms a consultation with the Association, as well as with the insurance carriers, would be sought to see if there is any way that these forms could be improved as to content and organization.

PHYSICIAN EDUCATION OF ICA PROBLEMS

Several problems were raised that are currently being raised by ICA. The first being the problem of the patient who is seen one time only in the emergency room of the hospital. The physician treats a patient there in the emergency room and subsequently prepares the ICA form in his office but the patient does not return for subsequent treatment and therefore, the form cannot be signed by the patient. This is creating considerable problems with ICA as without the patient's signature, processing cannot be done. Another problem that the ICA is working with is getting the physicians to com-

plete questions number 29 and 30 on the form. Dr. Ryan suggested that matters of type could be handled by preparing material for **Medical Memos** periodically as these items arise giving tips to the physicians as to problems ICA is facing and the way the physicians can help in clarifying in these problems.

Another member of the Commission suggested the possibility of their preparing a "check list" of things that must be done before the forms are submitted giving deadline dates and so forth, and that following preparation this Association could publish this check list for use by the physicians.

Meeting adjourned at 12:08 p.m.

Edward Sattenspiel, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held Saturday, November 21, 1970, in the offices of the Association, 810 West Bethany Home Road, Phoenix, Arizona, convened at 3:18 p.m., Fred H. Landeen, M.D., President and Chairman presiding.

MINUTES

Minutes of the meeting held October 3, 1970, were approved as distributed.

LOBBYIST

The letter from Thomas Edwards, M.D., Secretary, Maricopa County Medical Society, suggesting the Association retain a lobbyist, in addition to Gary L. Barnett, was discussed at great length.

It was suggested that we ask permission for Mr. Jacobson to attend a meeting of the Board of Directors of the Maricopa County Medical Society to explain our present lobbying activities and program.

GROUP MALPRACTICE PROGRAMS

Dr. Landeen reviewed the letter from CNA indicating that CNA is interested in developing a group malpractice insurance program with Arizona but that they could not proceed for a month or so due to their current negotiations with the AMA which must be concluded first.

Dr. Landeen then read a letter from Leon J. Zaccaro, Assistant Secretary, Casualty-Property, Special Accounting Marketing of The Travelers Insurance Company which indicated that they were very much interested in working toward a group malpractice insurance program. One of the provisions required by Travelers is that ArMA give "a 'marketing assignment letter' to the Travelers directing us (Travelers) to work on this program through a specified producer."

The matter of issuing a "marketing assignment letter" or "agent of record letter" was discussed in depth.

It was decided that Mr. Robinson was to call Mr. Zaccaro to clarify what ArMA's obligations are to such an Agent of Record. Can more than one agent be listed. Can such a letter be written to the Travelers having them designate any agency they deem appropriate.

BOMEX APPOINTMENT

Mr. Robinson reported that the Governor has requested a second list of nominees for the BOMEX appointment. That Maricopa County Medical Society was asked for recommendations and submitted the following:

Walter R. Eicher, M.D.
John W. Kennedy, M.D.
David Pent, M.D.

It was moved and carried that the above names be submitted to the Governor as nominees of the association to fill the existing vacancy.

WELFARE RIGHTS

The request that we become members of the Maricopa Welfare Rights Organization was reviewed — NO ACTION.

BENNETT AMENDMENT

Governmental Services Committee

The subject committee's recommendation was reviewed — NO ACTION.

AMA Request

Mr. Robinson presented the request from the AMA that we contact our Senators in an attempt to get the Bennett amendment delayed to the next session of congress was reviewed.

It was moved and carried that Mr. Robinson be authorized to send the requested telegrams.

AMA CERTIFICATE OF MEMBERSHIP

The Colorado Medical Society's request for support of a resolution to be introduced at the Boston meeting was received. The committee determined to make no recommendation to ArMA delegates on this matter.

UTILIZATION REVIEW — A POSITION PAPER COMPENSATION OF SECTION ON U. R.

Both of these items were referred to the next Board of Directors meeting.

SAMA INDIAN HEALTH PROJECT

The Governmental Service Committee's recommendation that ArMA endorse the subject program without financial support was reviewed.

It was moved and carried that we endorse the program without financial support.

OTHER BUSINESS

Public Relations Consultant

It was moved and carried that Mr. Robinson's recommendation to retain the Owens & Associates as Public Relations Consultant be approved.

Comprehensive Health Planning Council

Mr. Robinson reported that the Maricopa County Comprehensive Health Planning Council has recently amended its bylaws to provide for two representatives instead of one. It was noted that Mr. Robinson is the present representative.

It was moved and carried that Gary L. Barnett be appointed as the second representative.

Woman's Auxiliary Request

The request from the Woman's Auxiliary for an increase in their 1971 allotment from $1,000 to $2,000 was reviewed.

It was moved and carried that this matter be referred to the Finance Committee for their review and recommendation.

Meeting adjourned 4:25 p.m.

Edward Sattenspiel, M.D.
Secretary



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Consommé	29	Tomato	69
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THE UNIVERSITY OF ARIZONA
TUCSON, ARIZONA
ON
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PHILADELPHIA — The American College of Physicians (ACP) will sponsor a three-day postgraduate course on "Recent Advances in the Immunoprophylaxis and Chemotherapy of Infectious Diseases" Feb. 5-7, 1971 in Tucson, Ariz. The course will be given at The Hilton Inn, with the University of Arizona College of Medicine participating.

The course is one of 25 the ACP is conducting throughout the United States and Canada during the 1970-71 academic year to help internists and specialists in related fields keep informed on new knowledge in the diagnosis, treatment and prevention of diseases.

The Tucson course will summarize recent advances in infectious diseases, immunology and clinical biology and integrate them with existing knowledge. Newer antibiotics and immunizing agents as well as new methods of diagnosing and preventing infectious diseases will be discussed.

Co-Directors for the course are Vincent A. Fulginiti, M.D., Professor and Head of the Department of Pediatrics and David Rifkind, Ph.D., M.D., Professor and Head of the Department of Microbiology and Head of the Section of Infectious Diseases in the Department of Medicine, both of the University of Arizona College of Medicine. The faculty will be from the College of Medicine, with guest lecturers from the medical schools of the Universities of California, Colorado, Illinois, New Mexico and Texas.

For information and registration: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

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March 19, 20 and 21, 1971

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Registration: $25.00
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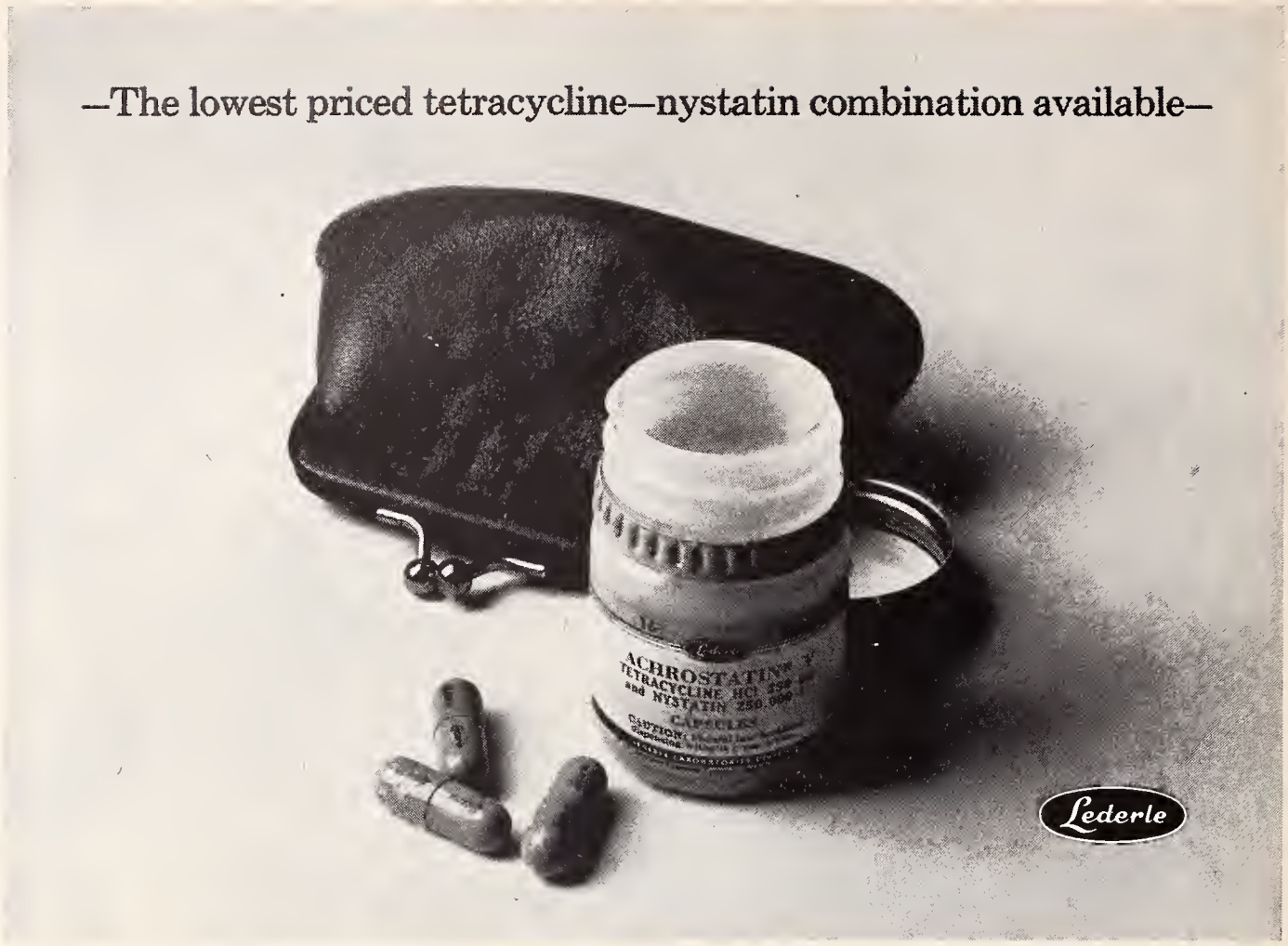
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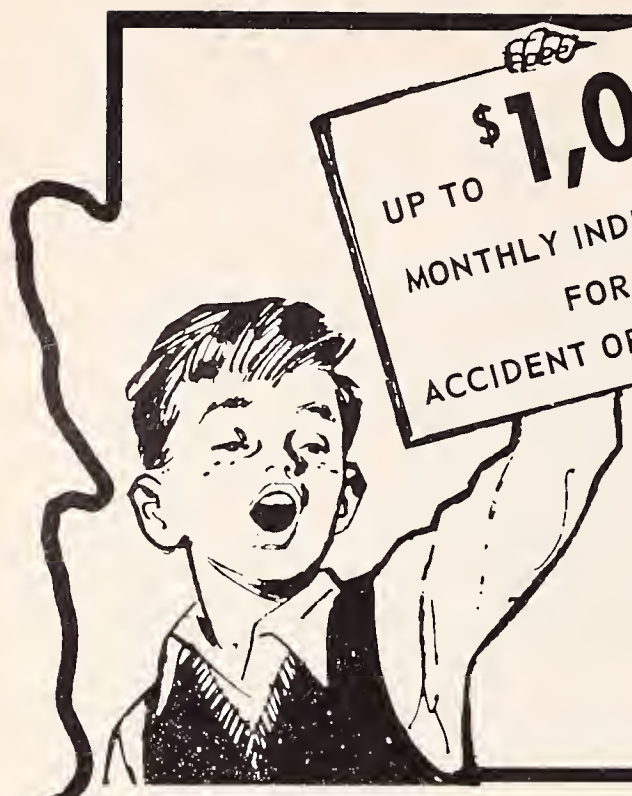
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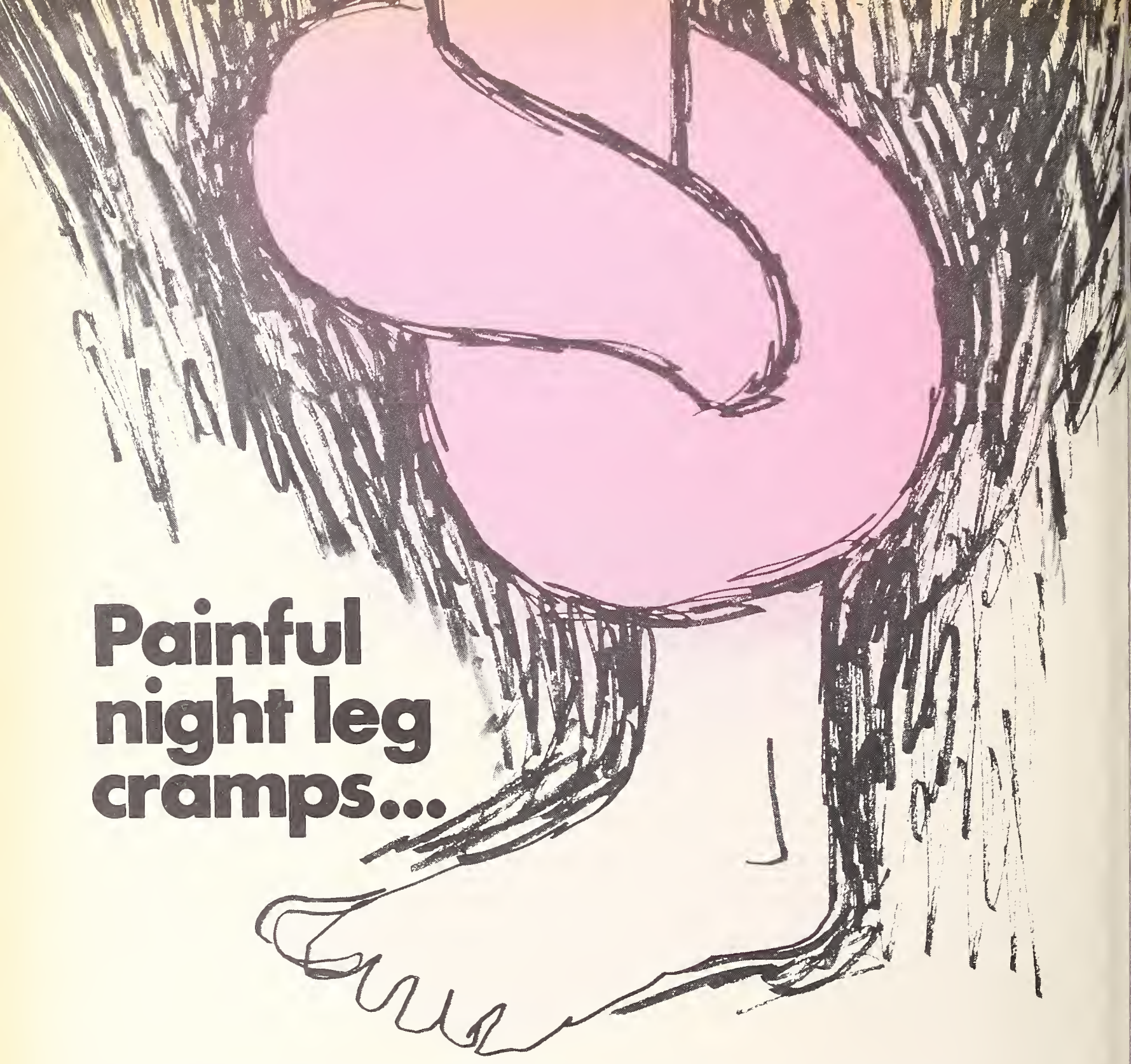
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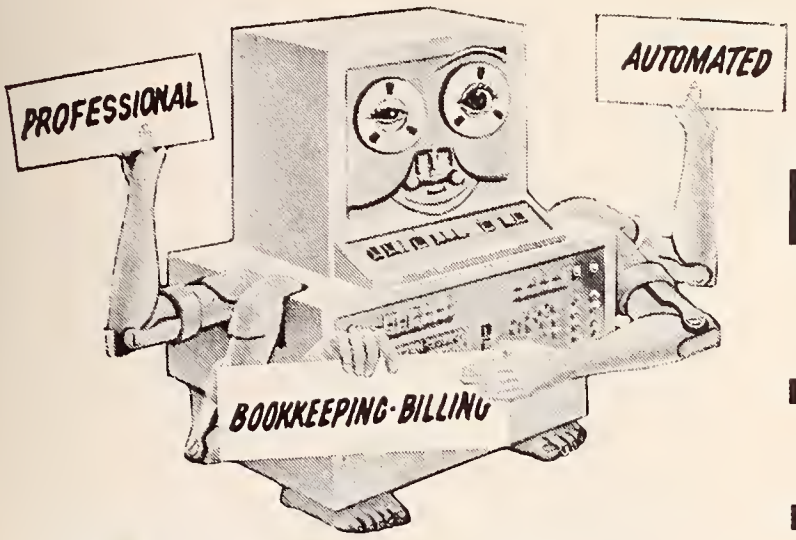


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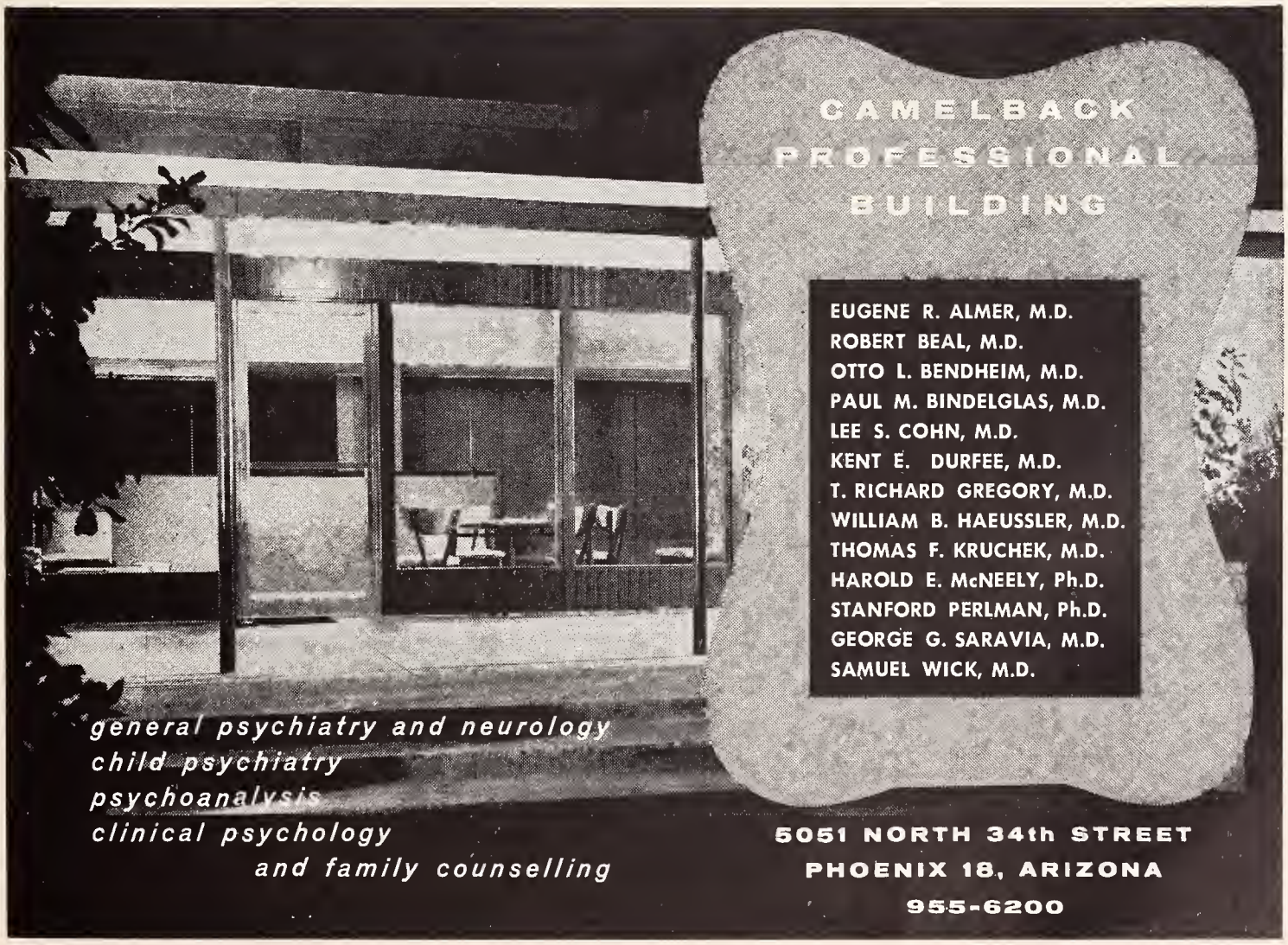
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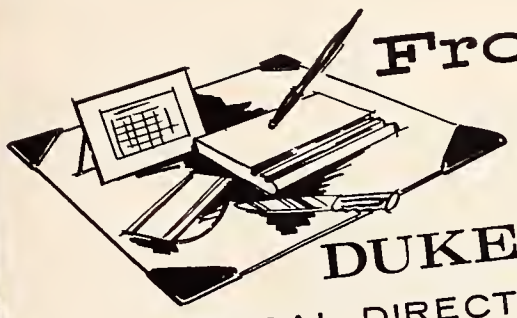
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COVER

Our most sincere appreciation is extended to Mr. Ted DeGrazia for the use of his painting, "Desert Medicine Man."

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Safety isn't everything in an antibiotic.

Until you need it.

Such as the time when tooth staining becomes a matter of consideration.

Or the patient has impaired kidney function.

Or there is a potential for a severe allergic reaction with a penicillin-sensitive patient.

There is no guarantee of safety, even with Erythrocin.

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The potency you need -the safety you want

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(ERYTHROMYCIN, ABBOTT)

Brief Summary

Indications

Erythrocin is indicated against gram-positive cocci — staphylococci (most strains), pneumococci and streptococci (including enterococci). Active against other pathogens, such as *Corynebacterium, Hemophilus, Clostridium, Neisseria,* and *Treponema pallidum,* the agents causing trachoma and lymphogranuloma venereum and primary atypical pneumonia caused by *Mycoplasma pneumoniae* (Eaton agent). Establish susceptibility of pathogenic organism when practical. Maintain therapeutic levels for ten days in the treatment of streptococcal infections to help prevent rheumatic fever and glomerulonephritis. Also consider local measures or surgery whenever indicated.

Contraindications

Known hypersensitivity to erythromycin. I.M. preparation also contraindicated in patients hypersensitive to the "caine" type of local anesthetics.

Precautions, Side Effects

Occasionally abdominal discomfort, cramping, nausea or vomiting may occur; generally controlled by reduction of dosage. Mild allergic reactions, such as urticaria and other skin rashes, may occur. Serious allergic reactions have been extremely infrequent; if hypersensitivity is encountered consider appropriate countermeasures, e. g., epinephrine, steroids, etc., and withdraw drug. The rare possibility of overgrowth of nonsusceptible organisms should be kept in mind; if it occurs withdraw drug and institute appropriate treatment. Local venous discomfort, generally mild, may occur with I. V. administration. I.M. preparation is suitable for deep intramuscular administration only; restrict use in children with small muscle mass. A mild transient local discomfort sometimes occurs following rectal insertion of Erythrocin Suppositories; discontinue if significant discomfort persists.

Administration and Dosage

I. ORAL: In adults with mild to moderate infections caused by readily-susceptible organisms 1.0 Gm. daily; more severe infections or those caused by less susceptible organisms 2.0 Grams daily; unusually severe infections up to 4 or more Gm./day. Daily dose in children is 15 to 25 mg./lb./day depending upon severity of infection. Daily dose should be administered in divided doses at 4-to-6 hour intervals. Continue treatment for at least 48 hours after symptoms have subsided and temperature has returned to normal. In fulminating or life-threatening infections, a parenteral form of erythromycin is preferred.

II. PARENTERAL: Intravenous administration may be continuous or intermittent (6 to 8 hour intervals); 1 to 4 Gm. daily in adults; 15 to 25 mg./lb./day in children, depending upon severity of infection. Recommended I.M. dose is 100 mg. (2 ml.) for adults, 50 mg. (1 ml.) for children 30 lbs. or more and 1.4 to 1.8 mg./lb. in smaller children. Injections are usually given at 6 to 8 hour intervals; may be given at 4 to 6 hour intervals for severe infections.

III. RECTAL: Following therapeutic doses are recommended in children: to 20 lbs., 1-125 mg. suppository every 8 hours; 20 to 40 lbs., 1-125 mg. suppository every 6 hours.

Change to oral therapy as soon as practicable.

101281

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It is not in pleasure,
but in rest from pain."

John Dryden

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Empirin® Compound with Codeine Phosphate gr. 1/2, No. 3

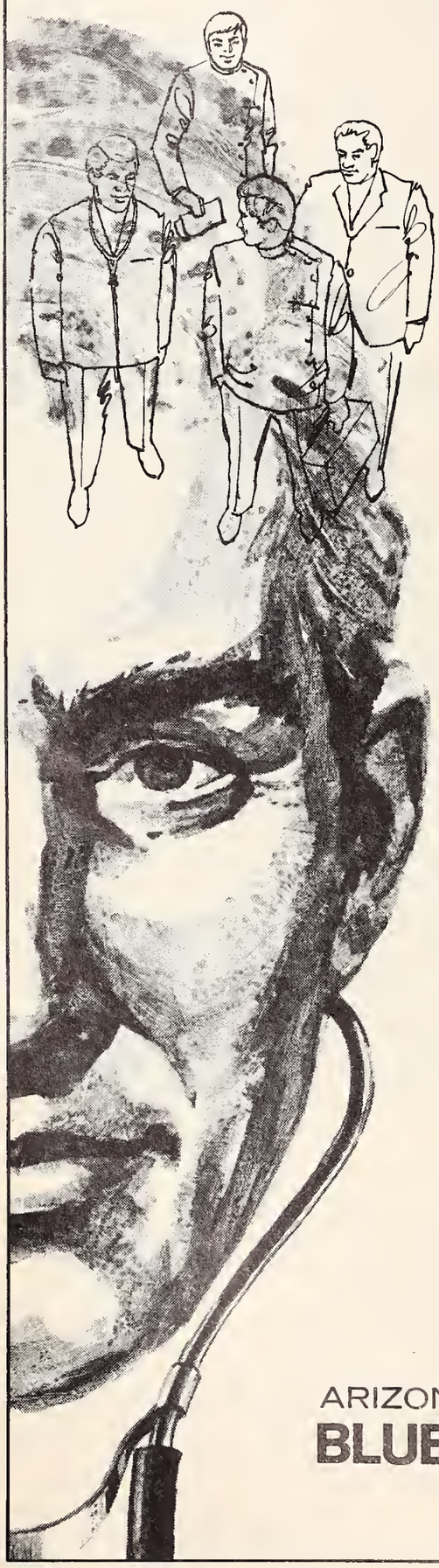
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Other conventional measures of treatment should be used as indicated. In infection, appropriate anti-infective therapy should be given.
Contraindications: ORENZYME BITABS should not be given to patients with a known sensitivity to trypsin or chymotrypsin.
Precautions: It should be used with caution in patients with abnormality of the blood clotting mechanism such as hemophilia, or with severe hepatic or renal disease. Safe use in pregnancy has not been established.
Adverse Reactions: Adverse reactions with ORENZYME have been reported infrequently. Reports include allergic manifestations (rash, urticaria, itching), gastrointestinal upset and increased speed of dissolution of animal-origin surgical sutures. There have been isolated reports of anaphylactic shock, albuminuria and hematuria. Increased tendency to bleed has also been reported but, in controlled studies, it has been seen with equal incidence in placebo-treated groups. (See Precautions.) It is recommended that if side effects occur medication be discontinued.
Dosage: One tablet q.i.d.

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TRADEMARK: BITABS U.S. PATENT NO. 3,004,893 9/70 0-009A 161

Orenzyme® Bitabs

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Cream (aminacrine hydrochloride 0.2%, sulfanilamide 15.0%, allantoin 2.0%)

Suppositories (aminacrine hydrochloride 0.014 Gm., sulfanilamide 1.05 Gm., allantoin 0.14 Gm.)

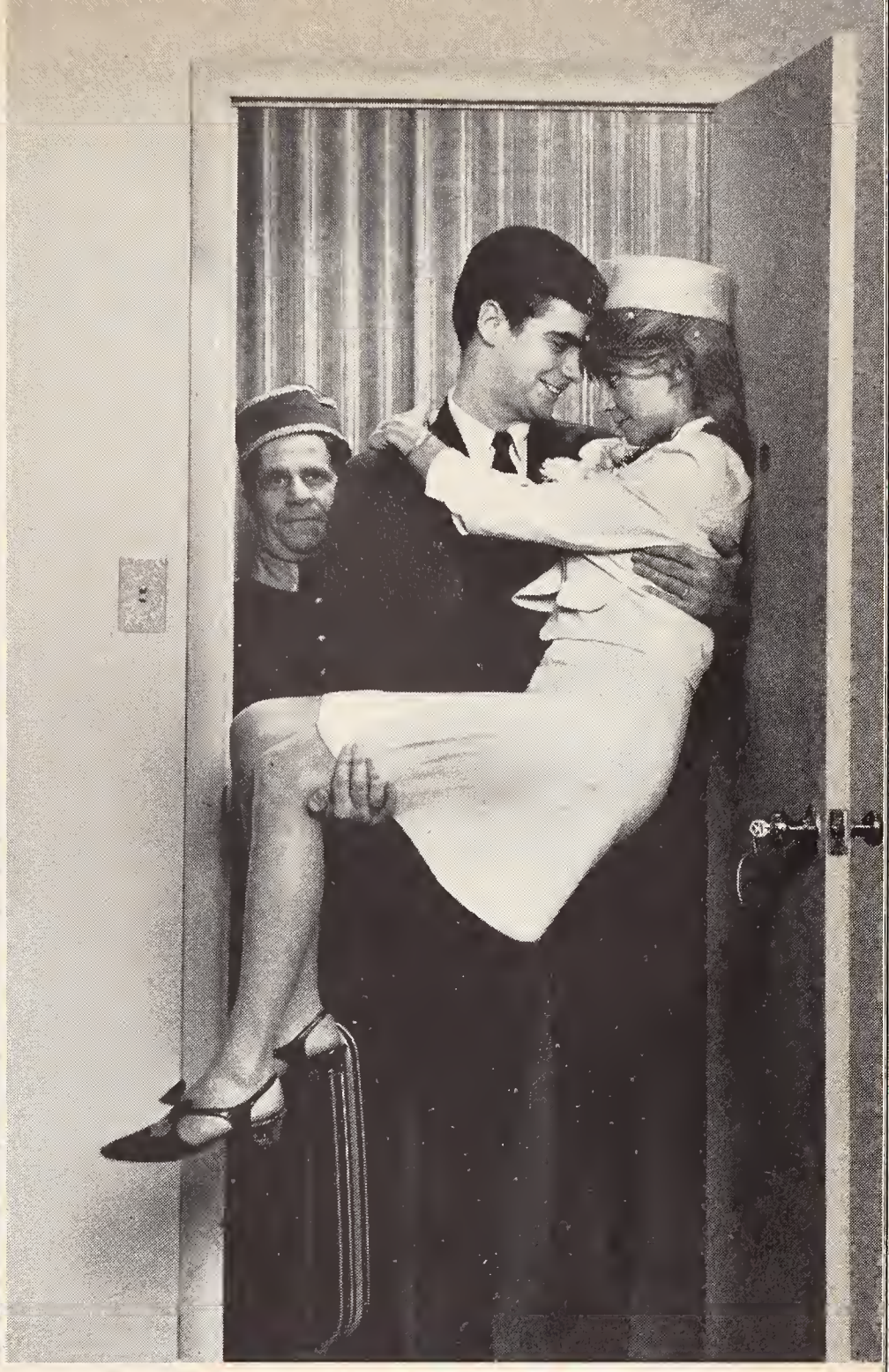
Contraindications: Known sensitivity to sulfonamides.
Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfonamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide toxicity are reasons to discontinue treatment.
Dosage: One applicatorful or one suppository intravaginally once or twice daily.
Supplied: Cream – Four-ounce tube with or without applicator. Suppositories – Box of 12 with applicator.

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nonsalicylate analgesic equal to aspirin for relief of in,[1,2] yet unlikely to cause the gastric irritation[2,3] or in-eased bleeding time[4] associated with aspirin therapy.

d a skeletal muscle relaxant shown in extensive clinical udies to be useful in a variety of low back disorders[5-7] but which is not an antihistamine or tranquilizer deriv-ive and is unlikely to produce a tranquilizing or seda-ve effect.[8]

rescribe PARAFON FORTE for effective spasmolysis and algesia in acute sprains, strains and myalgias of the wer back, including acute exacerbations of chronic con-tions. Your patients will appreciate the restored comfort d freedom of movement it usually provides.

NEIL LABORATORIES, INC., FT. WASHINGTON, PA. 19034

McNEIL

Contraindications: Sensitivity to either component. ***Warnings:*** *Usage in Pregnancy*—Use in woman of child-bearing potential only when potential benefits outweigh possible risks. ***Precautions:*** Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. ***Adverse Reactions:*** Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, *Paraflex* (chlorzoxazone) may possibly have been associated with gastrointestinal bleeding. While *Paraflex* (chlorzoxazone) and chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Usual Adult Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL" —bottles of 100.

References: **1.** Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970. **3.** Vickers, F. N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C. H., Jr., and Britten, A. F. H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Kestler, O. C., and Gyurik, J.: Industr. Med. Surg. *21*:372, 1962. **6.** Forster, S., et al.: Amer. J. Orthop. *2*:285, 1960. **7.** Data on file, McNeil Laboratories, Inc. **8.** Friend, D. G.: Clin. Pharmacol. Ther. *5*:871, 1964.

*U.S. PATENT NO. 2,895,877

the incomplete B-complex

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Larobec provides: B-complex vitamins, of particular importance to the patient who is on levodopa therapy and is deficient in water-soluble vitamins.

Larobec provides: Ascorbic acid, useful in assisting tissue repair in the debilitated patient.



Larobec does *not* provide: Pyridoxine (vitamin B_6)—which reportedly reverses the antiparkinson effects of levodopa therapy.[1,2]

Larobec™ Tablets

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1. Duvoisin, R. C.; Yahr, M.D., and Coté, L. D.: *Trans. Amer. Neurol. Assoc., 94*:81, 1969.
2. Cotzias, G. C.: *J.A.M.A., 210*:1255, 1969.

Complete Prescribing Information:
Each Larobec tablet contains:
Thiamine mononitrate (vitamin B_1) 15 mg
Riboflavin (vitamin B_2) 15 mg
Niacinamide 100 mg
Calcium pantothenate 20 mg
Cyanocobalamin (vitamin B_{12}) ... 5 mcg
Folic acid 0.5 mg
Ascorbic acid (vitamin C) 500 mg

Description: For prophylactic or therapeutic nutritional supplementation concomitant with levodopa therapy in patients with Parkinson's disease and syndrome, Larobec provides high potency dosages of the major B-complex vitamins, without pyridoxine (vitamin B_6) which has been reported[1,2] to reduce the clinical benefits of levodopa therapy. B-complex vitamins are essential in the anabolism of carbohydrate and protein and in hematopoiesis. Larobec also contains therapeutic quantities of ascorbic acid, a substance involved in intracellular reactions such as tissue repair and collagen formation.

Indications: Larobec is indicated for supportive nutritional supplementation when a water-soluble vitamin formula (without pyridoxine) is required prophylactically or therapeutically in patients under treatment with levodopa.

Warning: Administration of vitamin B_6 may be required if signs of pyridoxine deficiency develop. Larobec is not intended for treatment of pernicious anemia or other primary or secondary anemias. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with pernicious anemia who receive more than 0.1 mg of folic acid per day and who are inadequately treated with vitamin B_{12}.

Dosage and Administration: One or two tablets daily, as indicated by clinical need.

How Supplied: Orange-colored, capsule-shaped tablets, imprinted Roche 73; bottles of 100.

References:
1. Duvoisin, R. C., *et al.*: *Trans. Amer. Neurol. Assoc., 94*: 81, 1969.
2. Cotzias, G. C.: *J.A.M.A., 210*:1255, 1969.

high-potency nutritional support for the levodopa patient

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Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

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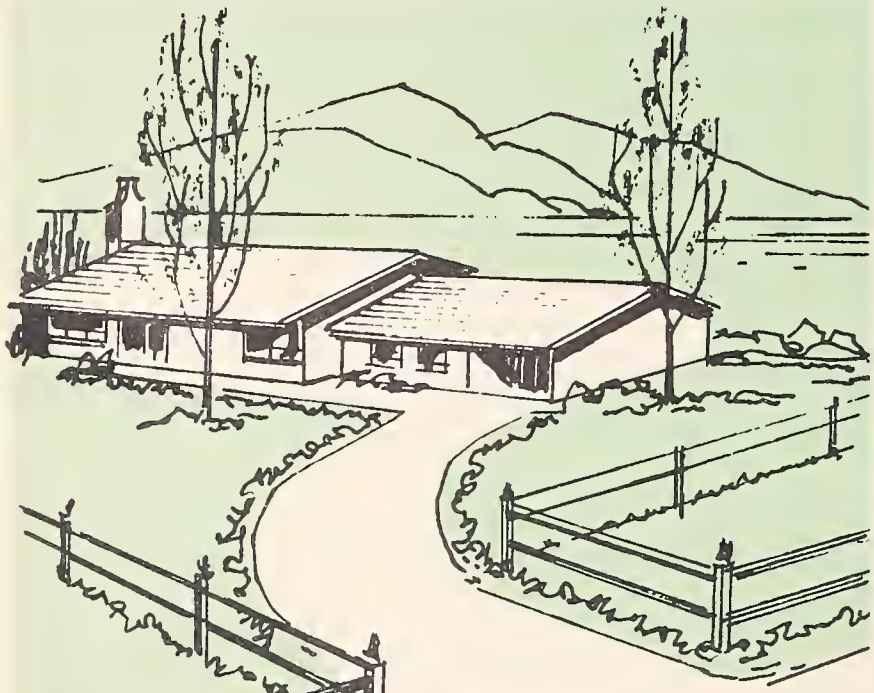
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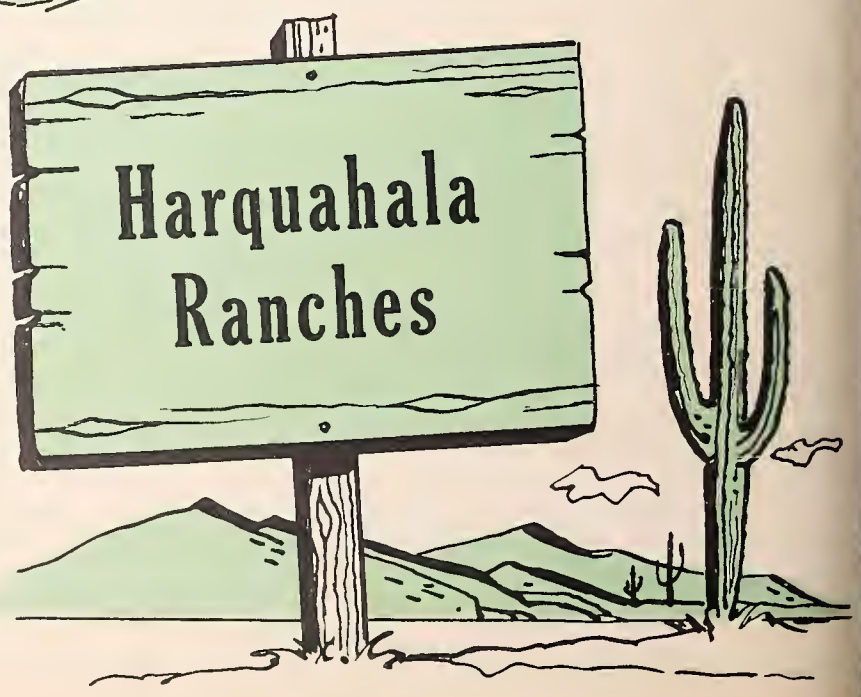
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In the treatment of solar/actinic keratoses..
An alternative to cold, fire and steel

2/23/68
Before treatment with 5% 5-FU cream. Patient R. G., 78 years old, shows extensive skin changes due to weathering and severe solar/actinic keratoses.

3/26/68
Following one month of therapy. Intense erythematous reaction is seen at sites of keratoses. Normal skin has not reacted. Some areas which had reacted initially have undergone healing despite continued topical application of 5% 5-FU.

6/11/68
Ten weeks after discontinuance of therapy. All areas have healed complet Residual mild erythema remains in so areas. This patient also had seborrheic keratoses which, as expected, have no reacted. There is no evidence of residu lesions or recurrences.



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n alternative conventional therapy

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Two to four weeks constitutes a typical course Efudex therapy. The response is usually characteris- and predictable. After three or four days of treat- nt, erythema begins to appear in the area of keratoses. s is followed by an intense inflammatory response, ling and occasionally moderate tenderness or pain. e height of the inflammatory reaction generally occurs o weeks after the start of therapy, and then begins subside as treatment is stopped. Within two weeks of continuing medication, the inflammation is usually ne. A mild erythema may remain for two or three nths before gradually receding. Since this response o predictable, lesions which do not respond ould be biopsied.

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Efudex is available as a 2% or 5% solution or a 5% cream. It is applied twice daily by the patient th a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, two im- rtant considerations: First, please consult the com- te prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

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Aspirin 325 mg. (5 gr.)
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The maestro no longer could stay.

Because diarrhea with cramping, nausea, and painful straining can strike at the most inopportune time, it takes a comprehensive agent to treat the total diarrheal syndrome and help get the patient back on the job. That's why so many physicians rely on Donnagel, especially during the fall and winter months when "flu" and viral gastroenteritis usually hit their peak.

Donnagel is much more than just a simple kaolin-pectin combination. It also contains the belladonna alkaloids to calm GI hypermotility and help relieve the distressing discomforts which so often accompany diarrhea. Certainly it's less expensive and more convenient than taking two medications. And the dosage is lower too. Available in the handy 4-oz. plastic bottle at pharmacies everywhere on your prescription or recommendation.



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ROBITUSSIN A-C®	●	●			
ROBITUSSIN-DM®	●		●		●
ROBITUSSIN-PE®				●	●
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the fish sinks to the bottom.

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Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.
Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.
Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.
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Warnings: May block the antihypertensive action of guanethidine or similarly acting compounds. Should be used with caution in patients with a history of seizures or urinary retention, or with narrow-angle glaucoma or increased intraocular pressure. Patients with cardiovascular disorders should be watched closely; arrhythmias, sinus tachycardia, and prolongation of the conduction time have been reported, particularly with high doses; myocardial infarction and stroke have been reported with drugs of this class. Close supervision is required for hyperthyroid patients or those receiving thyroid medication. May impair mental and/or physical abilities required for performance of hazardous tasks, such as operating machinery or driving a motor vehicle. Safe use during pregnancy and lactation has not been established; in pregnant patients, nursing mothers, or women who may become pregnant, weigh possible benefits against possible hazards to mother and child.
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When given with anticholinergic agents or sympathomimetic drugs, close supervision and careful adjustment of dosages are required. May enhance the response to alcohol and the effects of barbiturates and other CNS depressants. The possibility of suicide in depressed patients remains during treatment and until significant remission occurs; this type of patient should not have easy access to large quantities of the drug. Concurrent electroshock therapy may increase the hazards of therapy; such treatment should be limited to patients for whom it is essential. Discontinue the drug several days before elective surgery if possible.
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Original Articles

BROWN SPIDER BITES IN ARIZONA



P. H. DUFFEY, M.D.



H. P. LIMBACHER, M.D.

Having once seen the necrotizing effects and disfiguring eschar from the brown spider bite every physician will find this a rewarding clinical paper. The authors have outlined an excellent method of immediate and follow-up therapy which hopefully will prevent undue morbidity and disfigurement from the brown spider bite.

FROM THE DEPARTMENT OF SURGERY AND THE DEPARTMENT OF MEDICIN-HEMATOLOGY. THE TUCSON CLINIC, 116 N. TUCSON BLVD., TUCSON, ARIZONA 85702.

THE AUTHORS WISH TO ACKNOWLEDGE THE ASSISTANCE OF DRS. FRANK GRACIA AND EDWARD GRACIA FOR TRANSLATING THE MANY SPANISH ARTICLES CONSULTED IN THE PREPARATION OF THIS ARTICLE.

PHOTOGRAPHY BY THOMAS BURK, DEPARTMENT OF PHOTOGRAPHY, TUSCON MEDICAL CENTER HOSPITAL, TUCSON, ARIZONA.

Spider bites in Arizona are quite common, but because the spider is generally not recovered, the etiology of the lesion is frequently not recognized. Nine cases of necrotic arachnidism, including one case with a severe hemolytic reaction produced by a "native" spider, are reported. It is concluded that Loxosceles reclusa, as well as Loxosceles arizonica and Loxosceles unicolor, are present within the State.

The purpose of this article is to alert the physicians of Arizona to the existence of these envenomations. Early recognition and prompt treatment are important in minimizing the local and systemic effects.

SYMPTOMATOLOGY

The L. arizonica and L. unicolor produce very similar lesions, which are sufficiently unique that the etiology can be determined with reasonable accuracy, even though the spider is not recovered.[1]

The victim experiences a sharp pain at the site of the bite, but because the spider is extremely evasive and agile, the cause of the pain is frequently not recognized. After 2 to 3 hours the pain gradually increases until it is quite severe, extending up the extremity. There is generally no regional lymphadenopathy. A small, blue-purple bleb develops, surrounded by a white ischemic area, which in turn is surrounded by an erythematous area. This red, white, and blue "bullseye" is the hallmark of the envenomation. The central portion sloughs, leaving a "punched out" ulcer 1½ to 2 cm. in diameter or larger[1] which requires 2 to 8 weeks to heal. Nausea, chills, and headache may develop, which persist for 24 to 72 hours. No hemolytic reaction or death has been recorded with either L. arizonica or L. unicolor.

The L. reclusa, which has not been reported in Arizona prior to this paper, produces a similar but much more severe local lesion. Large areas of skin and subcutaneous tissue are destroyed. The lesions are unique in that they have a gravitational spread, giving them an irregular, oblong configuration.

Systemic reaction, i.e., visceral arachnidism, may or may not occur. It may develop in hours or, more commonly, in 1 to 5 days after the bite. It has been suggested that these symptoms develop when the venom is injected into a capillary, in the upper portion of the body, or more vascular areas.[2] Other authors believe the host factor is the variable.[3]

Scarletinaform, or petechial rash, urticaria, grand mal convulsions, fever, shock, nausea and vomiting, joint pains, massive hepato-splenomegaly[4] have been recorded and death can occur within 24 to 36 hours[5, 6, 7] even before the local lesion becomes conspicuous. Thrombocytopenia and severe hemolysis (anemia, hemoglobinuria and jaundice) may occur, resulting in anuria and death. At autopsy the kidney shows extensive changes characteristic of severe hemoglobinuric nephrosis.[8] Younger patients generally have earlier onset of symptoms and most deaths have occurred in children.

The following cases fit the description of the experimental and proven clinical cases of "necrotic arachnidism" sufficiently closely so that there is little doubt that they resulted from a bite of a Loxosceles arachnid.

Case 1. C.M., a 40-year-old housewife, placed her index finger into a small hole in the baseboard of her home. She felt a sudden, sharp pain in the tip of the finger, followed by severe pain extending up her arm. The tip of her finger sloughed, destroying approximately half of the distal phalanx, requiring a skin graft. There was no apparent systemic reaction. This incident occurred approximately ten years ago and the etiology was not suspected at the time.

Case. 2. R.C., a rancher, was picking up a saddle and felt a sharp pain in his index finger, not realizing what caused it. Approximately one-half of the tip of the finger sloughed, healing spontaneously, but with some deformity.

Case 3. W.S., a 26-year-old male, was seen in the Emergency Room, complaining of severe pain in his left thigh. He stated that he was putting on some trousers which had been shipped from Oklahoma with some furniture. Upon removing his trousers he was able to recover the spider, which was brought in. It was identified as a L. reclusa. The patient developed no apparent systemic symptoms, but a large area sloughed, requiring approximately 6 weeks to heal (Fig. 1).

Case 4. M.J.M., a 30-year-old female, was getting potatoes from a bin when she felt a sharp pain over the dorsum of her right hand. She developed a lesion, which sloughed and required



Figure 1
Lesion, 48 hours post-Loxosceles envenomation.

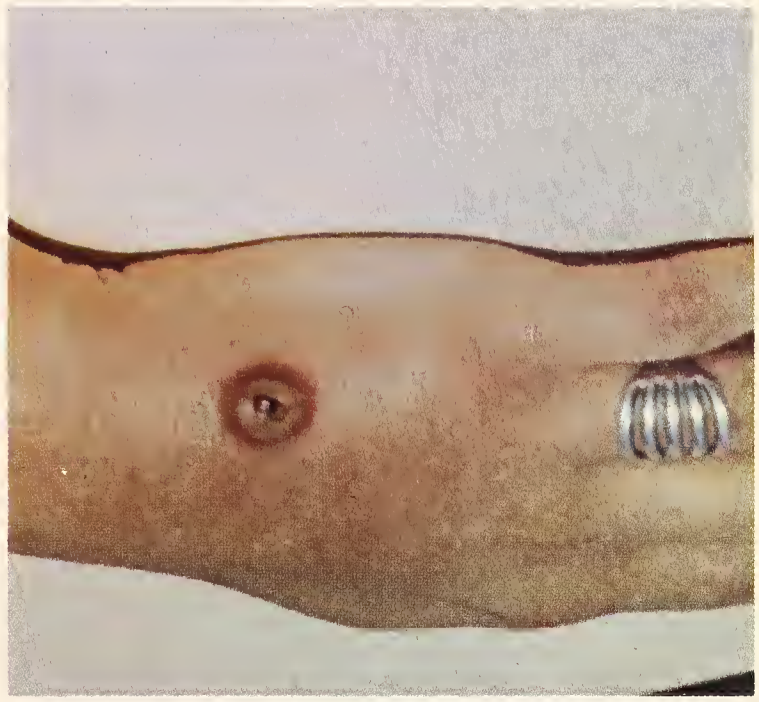


Figure 1A
Lesion, 5 days post-Loxosceles envenomation.



Figure 2 — Lesion, 1 week post-Loxosceles envenomation demonstrating gravitational spread.

approximately 5 weeks to heal spontaneously. Culture on the fourth day showed Staphylococcus aureus. The patient was given antihistamines, 40 U ACTH on the 12th and 13th days (Fig. 2).

Case 5. D.L., a 30-year-old mechanic for an airline, was putting on some coveralls in a locker room when he felt a sharp pain in his right thigh. He thought he was bitten by something, but did not recover it. He was seen approximately four hours after the incident. At that time he had a temperature of 101.8 degrees; there was a cutaneous lesion with a black center surrounded by an area of severe redness and induration. His hemoglobin was 13.5; hematocrit 42; white count 13,500 with 1 band, 81 segmented neutrophils, 1 eosinophil, 10 lymphocytes and 7 monocytes. He was given antibiotics and antihistamines, as well as tetanus toxoid. Recheck of the blood at the end of five days showed the white count to be normal. Urine examination revealed no hemoglobinuria. In six days the area of erythema had subsided, but there was a residual necrotic area approximately the size of a dime, extending through the skin and subcutaneous fat. It eventually healed spontaneously.

Case 6. M.A., a 45-year-old woman was referred by another physician as a possible brown spider bite. This was almost identical with the previous case. The patient had a large, extremely tender erythematous area on her right buttocks, with an area approximately the size of a dime which was black when first seen and gradually became necrotic, and again required several weeks to heal.

Case 7. F.C.H., a 65-year-old printer, was referred to the author as a possible vascular occlusion of his left leg because of an extremely swollen, discolored, and exquisitely tender fourth toe of the left foot. He had been treated with antibiotics with no improvement. Two cultures showed no growth. Examination revealed no evidence of vascular impairment. Clinical work-up failed to show any systemic reason for his symptoms. Eventually, the pad of the toe sloughed and, as the patient declined surgical closure, it gradually healed over a period of three months. X-ray of the toe showed no bony abnormality.

Case 8. L.M.E., a 37-year-old male, was an employee of a telephone company. He was bitten by what he thought was a spider on his right arm, just above the wrist, on the ulnar aspect. He was treated with antibiotics and analgesics, but continued to complain of extreme pain and tenderness, extending to his mid-upper arm over the medial aspect. There was no axillary lymphadenopathy present. On the third day the area was excised under local anesthesia and allowed to remain open. Hydeltra TBA, 1 cc, was injected into the area after it was excised. The specimen was sent to the Pathology Lab for microscopic examination, which showed a nonspecific necrosis. The severe pain did not recur and the edges of the excised area remained normal. As it was closing rapidly, it was allowed to heal without secondary closure. His blood count and urine remained normal. A culture of the area was taken at the time of excision, which showed coagulase positive Staph aureus. He was given 2.5 mg. Prednisone per day from the 3rd to the 13th days.

Case 9. K.C. was a 16-year-old, white female who received an apparent spider bite on the inner aspect of her right upper arm approximately 3 days prior to admission to the hospital. When admitted, there was an extremely painful area approximately 5 cm. in diameter which had a small bluish center surrounded by an area of ischemia which in turn was surrounded by an area of erythema, a typical red, white, and blue "bullseye." There was no lymphadenopathy present. She appeared acutely ill and moderately toxic, with light-headedness and tachycardia on sitting up, and was oliguric.

Laboratory studies showed evidence of hemolysis: bilirubin 6.9 mg.% (6.3 mg.% indirect); plasma hemoglobin 6.8 mg.% (normal up to 5 mg.%); and plasma haptoglobin 25 mg.% (normal 100-200 mg.%). The initial hemoglobin of 10 gm.% dropped to 7.6 gm.% overnight with hydration and gradually returned to 10 gm.% by the time of discharge on the sixth hospital day. The red blood cell indices were normochromic, normocytic.

Other studies included elevated sedimentation rate of 66mm/hr. (Wintrobe); normal white blood count; LDH 265 Wacker units; fibrinogen 615 mg.%; prothrombin time-control 12 seconds, patient 14.2 seconds; urine culture: E coli and nonhemolytic Streptococci; platelet count 314,000 and reticulocyte count 4.2%

Because of her toxic appearance with hemolysis, oliguria, and vomiting, she was begun on I.V. fluids with Hydrocortisone, 300 mg./day, and Bicarbonate. Her oliguria was relieved by the next morning, but postural light-headedness persisted until 1 unit of packed red cells was

given on the third day. When she was able to eat again, she was switched to Prednisone, 10 mg. every 8 hours and later every 12 hours. The bilirubin dropped to normal (0.6 mg.%) by the fourth day.

The patient was continued on decreasing doses of Cortisone for an additional two weeks. By the 21st day following the bite there was an open area 10 cm. x 6 cm. exposing the deep fascia. One month after the envenomation, the patient was re-admitted to the hospital, where the defect was closed, the skin healing by primary intention (Fig. 3 & 4). This case is believed to be an example of cutaneous and visceral arachnidism due to a bite by a "native" L. reclusa.

HISTORY

The Loxosceles laeta has been implicated as a cause of necrotic arachnidism with hemolysis in South America as early as 1877. Necrotic-hemolytic reactions were seen earlier in the United States, but it was not until 1940 that Götten and McGowan reported a case of hemolytic anemia and hemoglobinuria in a 3-year-old girl bitten by a spider. In 1957 Atkins et al[9] implicated the L. reclusa as the cause of necrotic arachnidism in the United States, occurring in the south-central states, particularly in Oklahoma, Arkansas, Kansas and Tennessee. Recently there have been increasing numbers of cases reported in many states as far north as Montana.[10] There is the question of whether the spiders are actually spreading throughout the country or whether physicians are just beginning to recognize them.[11] However, it is interesting to note that there have been an increasing number of cases occurring in Brazil and Argentina also. Studies have shown a relative, as well as an actual, increase in re-



Figure 3
Lesion, 6 days post-Loxosceles reclusa envenomization with visceral Loxosceles.



Figure 4 **Lesion, 1 month post-Loxosceles reclusa envenomization with visceral Arachnidism.**

cluse spiders in Arkansas, Missouri and Oklahoma, and it has been stated that recluse spiders can be found in any home over 3 years old in south-central United States.[12] There may be some ecological explanation for this increase.

In Arizona, the L. arizonica and L. unicolor have been known to be indigenous for years. They can be easily found in many homes. However, until recently their bites were not recognized. Up to the time of this paper, no bites and no specimens of L. reclusa have been reported in Arizona.

PATHOPHYSIOLOGY

Denny et al,[13] utilizing in vivo studies on dogs and also in vitro experiments, demonstrated that there was a heat labile fraction in L. reclusa venom which had a direct hemolytic action on red cells. It was not complement-dependent but apparently enzymatic in nature. The factor being responsible for this reaction is apparently a lysolecithin which acts by damaging the lipid structure of the erythrocyte membrane. They also noted that there was antibody formation in experimental animals after repeated venom exposures, suggesting the possibility that a complement immunologic mechanism could be responsible for the hemolysis. However, animals repeatedly challenged showed neither an increased nor decreased sensitivity of either the cutaneous or hemotoxic reaction.

Smith and Micks[14] demonstrated that by depressing the circulating polymorphonuclear leukocytes, there was a marked decrease in both edema and necrosis following L. reclusa envenomation, as in the Arthus phenomenon. They also suggested that the infiltration was complement dependent. They noticed a striking resemblance between the lesions produced by L. reclusa venom and the Arthus reaction except that the sharply demarcated ulcer produced by the L. reclusa venom was not found in the Arthus reaction. The possible explanation for the difference was that a necrotizing arteritis is produced by the spider venom, whereas the vascular lesion in the Arthus reaction is more limited to the venules.

TREATMENT

The use of *corticosteroids* and *excision* has been proven clinically and experimentally to be most effective in the treatment of Loxosceles envenomation. Dillaha et al[7] proved quite conclusively that the prompt administration of corticosteroids is extremely effective. Sixteen patients with visceral arachnidism were treated. Six did not receive corticosteroids and five were treated with lesser amounts of corticosteroids or were started late. All of these cases developed local necrosis. The remaining five, treated with larger amounts of corticosteroids and begun earlier, did not develop necrosis or systemic symptoms.

They verified the effectiveness of this therapy in the experimental animal. In a series of ten rabbits challenged with an equal amount of pooled venom, intravenous Prednisolone was given to three rabbits six hours following the venom injection. No local reaction occurred and they survived. Five of six animals receiving the steroid 24 to 48 hours after the challenge died within three days, as did the untreated control.

They conclude that small amounts of corticosteroids have little or no effect, but larger amounts, given early, completely abort the gangrenous response, as well as the systemic reaction.

The dosage schedule they recommend is 80 mg. of methyl prednisolone (Depo-Medrol) intramuscularly immediately, followed by one or two additional doses of the same amount in 24 and 48 hours. Subsequently, step-wise, decreasing doses of 40, 20 and 10 mg. every 24 hours are administered, depending upon the patient's response. However, it should be noted that Fardon et al[15] reported individual cases of hemolytic anemia developing despite early steroids. They found that local infiltration of Triamcinolone (Aristocort) in rabbits six hours after L. reclusa envenomation caused no significant effect.

Excision. Fardon et al[15] were able to prevent all local and systemic reaction in rabbits by excising all apparently involved tissue six hours after envenomation with immediate closure. This was successful in 100% of the cases. Incision and suction, or partial incision, was unsuccessful. They recommend complete excision and skin graft or closure at any stage if the general condition permits. However, other authors report that skin grafting is only successful in approximately 50% of the cases. Our Case No. 8 had good relief of pain by excision.

As secondary infection of the necrotic lesions and urinary tract infection are very common, culture and appropriate *antibiotics*, as well as *tetanus prophylaxis*, should be administered. *Blood replacement*, preferably in the form of packed cells may be needed if the hemolytic anemia is severe, and *alkaline intravenous fluids*

are indicated. There is no apparent contra-indication to the use of *analgesics*, *sedatives*, and *antiemetics*.

Once a severe hemolysis with oliguria has been diagnosed, treatment is similar to that following hemolytic transfusion reaction.

Taylor and Denny[16] used *peritoneal dialysis* in a 65-year-old man with severe visceral arachnidism and renal shutdown. The dialysis over a period of four days resulted in improvement, but the patient later expired from hemoglobinuric nephrosis.

Rodriguez[17] reported three cases treated with *hemodialysis*, two of which survived and one expired.

Nance[3] reported a severe case of visceral arachnidism occurring in a 3-year-old girl who was bitten in front of the left ear. She was treated with *exchange transfusion* of 2000 cc of whole blood. She recovered and the cutaneous lesion healed in two weeks. The patient was also given 40 mg. of Prednisone per day for four days. J. F. Nicholson and Ben H. Nicholson[6] also reported a 4-year-old female in whom exchange transfusion was apparently life-saving.

Fardon[15] found no effect on the local lesion in rabbits treated with *low molecular weight Dextran*. However, Atik et al[18] reported protection from acute renal failure due to incompatible transfusions in dogs with low molecular weight Dextran. As the two conditions are comparable, this drug may have a place in the treatment of human visceral arachnidism complicated by oliguria, although there have been no reports of its use in such cases.

Several other drugs have been reported which should be mentioned. *Benadryl*, infiltrated locally and administered systemically, has been recommended.[2] However, Fardon et al[15] found that Benadryl infiltrated locally six hours after envenomation in rabbits produced no effect.

Lessenden et al[12] reported that local lesions responded well to the administration of 100 mg. of Atarax (hydroxyzene hydrochloride) four times a day by mouth in adults.

Fardon et al[15] found that the injection of Regitine experimentally in rabbits six hours after and also prior to L. reclusa envenomation produced no effect on the local reaction.

In Argentina and Brazil, where bites of L. laeta are very common, there is a commercial *antivenom* available, produced by the Butantan Laboratory, which is reported by several authors to be the best treatment for both the cutaneous and visceral forms. A dosage of 5 to 10 cc of the antivenom is given subcutaneously. As both the local and systemic symptoms of L. reclusa and L. laeta are identical, it would be interesting to determine whether the L. laeta antivenom is efficacious in the treatment of L. reclusa, arizonica or unicolor envenomation.

Lessenden and Jimme[12] attributed the mildness of the reaction seen in one patient to a previous bite. They demonstrated antibodies in immunodiffusion techniques in laboratory animals subjected to repeated innoculations of L. reclusa venom.

If the number of cases of L. reclusa envenomation continues to increase, the development of a specific L. reclusa antivenom would seem to be feasible and practical.

SUMMARY

Nine cases of probable brown spider envenomation are recorded occurring in Arizona. Seven of these, in all probability, were of either L. arizonica or L. unicolor. One case of a proven envenomation by a non-native L. reclusa without visceral arachnidism and one case of visceral arachnidism, apparently produced by a "native" L. reclusa, are recorded. A summary of our present knowledge of the mechanism of venom action is presented and methods of treatment are outlined.

REFERENCES

1. Russell, F. E., et al: Bites by the brown spiders Loxosceles unicolor and Loxoceles arizonica in California and Arizona. Toxicon (1969) 7:109-117. Pergamon Press. Great Britain.
2. Steeger. A. and Guentealba, G.: Loxoscelismo cutaneo localizado. Revista Chilena Pediat. 32-539-41 Sept. 1961.
3. Nance. W. E.: Hemolytic anemia of necrotic arachnidism. Amer. J. Med. 31:801-7 Nov. 1961.
4. Dillaha. C. J. et al: North American Loxoscelism. JAMA 188:33-6. 6. April 1964.
5. Vukusic. M. A.: Loxoscelismo cutaneo-visceral mortal. Bol. Chil. Parasit. 17:25-7 Span. Jan./Mar. 1962.
6. Nicholson. J. F. and Nicholson, B. H.: Hemolytic anemia from brown spider bite. J. Okla. Med. Assoc. 55:234-6 June 1962.
7. Dillaha, C. J., et al: The gangrenous bite of the brown recluse spider in Arkansas. Vol. 60, No. 3, pp 91-4 Aug. 1963.
8. Riley. H. D., et al: Brown spider bite with severe hemolytic phenomena. J. Okla. Med. Assoc. 57:218-23 May 1964.
9. Atkins. J. A., et al: Necrotic Arachnidism, Am. J Trop. Med. & Hyg. 7:165. 1958.
10. Lee. R. V., et al: North American loxoscelism. Rocky Mountain Med. J. 66:57-9 May 1969.
11. Lewis. M. J. and Regan. J. F.: Necrotic Arachnidism. California M. 105:457-62 Dec. 1965.
12. Lessenden. C. M., Jr. and Zimmer L. K.: Brown Spider Bites. J. Kansas Med. Soc. 61:379-85. 1960.
13. Denny. W. F., et al: Hemotoxic effect of Loxosceles reclusus venom: In vivo and in vitro studies. J Lab. and Clin. Med., St. Louis. Vol. 24 No. 2. pn 291-8 August 1964.
14. Smith. C. W. and Micks. D. W.: The role of polymorphonuclear leukocytes in the lesion caused by the venom of the brown spider, Loxosceles reclusa. Lab. Invest. 22:90-3 Jan. 1970.
15. Fardon. D. W., et al: The treatment of brown spider bite. Plastic & Reconstructive Surgery. Vol. 40, No. 5, pp 482-8 Nov. 1967.
16. Taylor. E. H. and Denny. W. F.: Hemolysis, renal failure and death presumed secondary to bite of brown recluse spider. South. Med. J., J. South. M. A., Vol. 59, No. 10 Oct. 1966, pp 1209-11.
17. Rodriguez. L. E. M.: La Hemodialisis Con Rinon Artificial En El Tratamiento De La Insuficiencia Rena Aguda Por Loxoscelismo. An. Pac. Med. Lima 47:419-39. 1964.
18. Atik, M., Hanale, B. and Pearson, J.: Prevention of acute renal failure, hemodynamic observations of transfusion reactions. J. A. M. A., 183:455, 1963.

MYCOBACTERIAL DISEASES



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Numerous mycobacteria, other than M. tuberculosis have been reported in the literature since 1935. The present practice of classifying these organisms by growth characterstics, though convenient for the bacteriologist, has not clarified things for the practicing clinician. This paper reviews the more frequently encountered mycobacteria, with classificaton and emphasis on their clinical and therapeutic characteristics as well as their bacteriological aspects. Included in the discussion are those of the acid-fast smears, PPD skin test, and surgical therapy. It is felt that this classification will clarify some of the confusion which has arisen in the minds of clinicians.

THE CONFUSION

We have known of the existence of mycobacteria since Hansen and Neisser discovered Mycobacterium leprae in 1879 and since Koch discovered Mycobacterium tuberculosis in 1882. Forty-two years after Koch's discovery, there was speculation that there were other mycobacteria which were responsible for human disease. This was verbalized at the 1924 International Union Against Tuberculosis (IUAT).[1] Since 1935, there were scattered reports in the medical literature of other mycobacteria being etiological agents in human disease which confirmed the suspicions. These reports continued with increased frequency but without an overall interpretation until 1959 when Runyon[2] attempted to sort these other mycobacteria into some working arrangement. He developed a classification based, primarily, upon pigment production in the colonies. Runyon intended this to be a preliminary classification until we had developed more knowledge of these organisms. His classification has been useful in clarifying some of the issues which have arisen, but it can now be abandoned.

Our knowledge of these other mycobacteria has now become more extensive, but we are still using a classification of organisms which have been called "atypical mycobacteria," "anonymous mycobacteria," "unclassified mycobacteria," and "mycobacteriosis." These varied and confusing appelations are illustrative of the confusion which, unfortunately, exists regarding these organisms and the diseases which they can cause. We are now at the point of being able to discard this classification and its various names, but it seems that it will die hard. Perhaps it is the mystique which surrounds the original word "anonymous" which will perpetuate it.

This lack of an appropriate name to head the classification is the first confusing point which we have encountered. Second is the duplication of species names which have been applied by various investigators in the interim. An example is Mycobacterium balnei and Mycobacterium marinum which are synonymous.

A third area of confusion is the fact that Runyon's original classification was based upon pigment production. We have learned that the pigment production of the colonies is not constant and that there are overlaps between the various groups.

Fourth is the letter which is used to designate the PPD (purified protein derivative) skin test of these mycobacteria. For example PPD-Y is used for Mycobacterium kansasii instead of

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PPD-K. This then presents a duplicate set of initials to memorize or rather to confuse.

TO CLEAR THE CONFUSION

The study of mycobacteria does not have to be this confusing. Enough is known about these mycobacteria now to classify them into genus and species and to consider the diseases caused by the various mycobacteria as separate entities. Since they are related species, we can make certain generalizations about them. This situation is not unlike that of the salmonella bacteria. It is known that Salmonella typhosa causes typhoid fever, that Salmonella paratyphi causes paratyphoid, etc. It is known that in spite of these being distinct diseases: that the bacteria have certain common bacteriological features; that there can be similar clinical pictures; and that there are common denominators in the treatment, etc.

It is proposed that we abandon the original groupings of mycobacteria and adopt, for the present time, the classification which Wayne, Runyon and Kubica[3] recently published (see Table I). We may anticipate that there will be further changes made in this classification in the future, but it can serve as an up-to-date model.

With this newer classification as a point of reference, we can begin to deal with the different mycobacterial diseases of the lung. We should concentrate on the fact that there are several different diseases of the lung which have certain common features. The common denominators are: 1. *The x-ray appearance.* Most of the organisms produce a pulmonary disease which causes a similar radiological picture and cannot be used as a differentiation. 2. *Clinical features.* The clinical course which is produced by these mycobacteria can be absolutely identical and this cannot be used as a means of differentiation. 3. *The histological appearance.* The pathological changes of the tissue is the same in each of these diseases, so that the histological appearance cannot be used to separate them. 4. *The stained sputum or gastric smear* when positive, will, in general, show a similar appearance for all of these organisms.[4, 5] Therefore, the specific etiological organism cannot be differentiated on this basis alone.

One distinguishing feature of each of these diseases is the bacteriological picture. These organisms can be separated in the laboratory by differences in the cultural appearances and by cytochemical differences. A second distinguishing feature is the therapeutic approach which is necessary to effect a cure. Most of these organisms exhibit some degree of resistance, whether it is partial or complete, to the primary antituberculosis drugs. Therefore, a point which much be stressed is adequate bacteriological examination and adequate sensitivity testing of these organisms. The final distinguishing point is the individual's reaction to the specific skin test (PPD). When a person is tested with various PPDs, he will exhibit the strongest reaction at the site of injection of the specific PPD of the invading organism. There will probably be a smaller reaction at the site of the injections of the other PPDs, which is called a cross reaction.[6, 8]

MYCOBACTERIAL DISEASES

Mycobacterium tuberculosis is the organism which causes 90% of the mycobacterial lung disease in humans in the United States. This rate is variable in different parts of the country, as there are some areas where one of the other mycobacteria is more prevalent. Its PPD antigen is called PPD-S (standard). It produces a variable clinical and radiological picture, from a small infiltrate to multiple destroyed areas of the lung, to a pneumonic infiltrate, etc. Pathologically, it is characterized by a granulomatous reaction with Langhan giant cells and with caseation. Eventually, cavitary lesions develop in the lung as the disease progresses. The majority of the cases respond to a combination of two or three of the primary drugs: Isoniazid, Streptomycin, paraaminosalicylic acid and Ethambutol. The majority of cases do not need surgical intervention.

Cases of disease due to Mycobacterium tuberculosis who have positive sputum cultures and are not under treatment can transmit the disease to other persons by "droplet nuclei" in a more or less direct fashion. Mycobacterium tuberculosis is not a free living organism. The cultures exhibit a positive niacin test.

Mycobacterium kansasii is an organism which produces a pulmonary disease in man which has a similar radiological picture to the disease caused by Mycobacterium tuberculosis. The pathology of the disease, which is caseating granulomata, is indistinguishable from the pathology caused by Mycobacterium tuberculosis. When it is found in the sputum, it is almost always associated with pulmonary disease. The clinical picture is, again, similar to the clinical picture of

disease due to Mycobacterium tuberculosis. The disease is found throughout the United States, but it is more common in the Mid West. The skin testing antigen is labeled PPD-Y. Mycobacterium kansasii has also been reported to cause disease of bone,[9] meninges,[10] and cervical glands.[11]

In the Veterans Administrative Cooperative Study,[12] it accounted for 60% of the pulmonary tuberculosis due to organisms other than Mycobacterium tuberculosis. Pfeutze et al[13] in Chicago reported a similar incidence of the disease. They further reported that in spite of the variable resistance to the primary drugs, there was a good clinical response to triple therapy with Isoniazid, Paraaminosalicylic acid and Streptomycin. There is, usually, a 70-80% cure rate with chemotherapy. Because of the lack of 100% cure, surgical resection is often indicated.

There is no reported incidence of disease in family members of patients suffering from disease due to Mycobacterium kansasii. This important difference from Mycobacterium tuberculosis indicates that the organism is not transmissible from person to person and, therefore, is not important from an epidemiological viewpoint. The cultures of M. kansasii produce a pigment when they are grown in the dark. These cultures do not produce niacin.

Mycobacterium intracellulare (Battey bacillus) is an organism which accounts for 30% of the pulmonary tuberculosis due to organisms other than Mycobacterium tuberculosis.[12] It has been reported in various parts of the country but it is found, most often, in the Southeastern United States. The PPD antigen has been labeled PPD-B.

Mycobacterium intracellulare produces a caseating granulomatous disease which forms cavities similar to the disease caused by the other organisms which have been discussed. Since the radiological picture is also the same, this cannot be used to differentiate the disease. Similarly, the clinical picture is the same as in disease due to M. Tuberculosis and M. kanasii. The response to chemotherapy is not as good as is the response of M. kansasii. There is only a 20% "cure" rate without surgery.[14] If the disease is limited to one area of the lung and, therefore, can be resected, the combination of chemotherapy and surgery offers a 75% "cure" rate.

Like M. kansasii, Mycobacterium intracellulare does not cause disease in contacts of active cases. It has never been found to be transmissible from person to person. The cultures of M. intracellulare do not produce pigment and the niacin test is negative. M. intracellulare resembles Mycobacterium avium, but it can be distinguished by cytochemical tests.

The above three organisms, Mycobacterium tuberculosis, Mycobacterium kansasii, and Mycobacterium intracellulare account for more than 99% of the pulmonary tuberculosis which is found in man. There are other mycobacteria which are, occasionally, reported as causing pulmonary disease, such as Mycobacterium xenopi, Mycobacterium fortuitum, Mycobacterium scrofulaceum, Mycobacterium bovis and Mycobacterium avium.

Mycobacterium fortuitum is a mycobacterium which is, usually, found as a contaminant. It has, however, been found in association with pulmonary disease.[15-16] It has also been found, in one case, to cause subcutaneous abscesses at sites of insulin injections.[17] The disease, like the others described, causes a caseating granuloma and responds variably to medication. Cultures of M. fortuitum grow in one week which is distinctive and has earned them the name of "rapid growers." The cultures are niacin negative.

Mycobacterium scrofulaceum can cause pulmonary or disseminated disease. When it is found in the sputum, however, it is, usually, in association with "burned out" tuberculosis or with chronic obstructive lung disease.[18] It is, therefore, a commensal organism. M. scrofulaceum is more often associated with cervical adenopathy, (scrofula).[19] This disease, usually, responds to antituberculous drugs. The PPD antigen is PPD-G. The cultures produce pigment regardless of light conditions and, again, are niacin negative.

Mycobacterium avium is more familiar by name than the other mycobacteria. It is rarely associated with human disease. M. tuberculosis, M. bovis and M. avium are known as the mammalian tubercle bacilli.

Mycobacterium bovis is the source of BCG (Bacillus of Calmette and Guerin) vaccine. It was, formerly, a common cause of cervical adenopathy, but since the tuberculin testing and control program in cattle, it is a minor problem.

There are also saprophytic mycobacteria which have not been described here, some of which are associated with skin ulcerations in man. (See Table I.)

Table I
(modified from Wayne, Runyon and Kubica[3])
Mycobacteria Isolated from Human Specimens

Name	Significance (primary)	Original Runyon
Mycobacterium tuberculosis	Human disease (pulmonary)	
Mycobacterium kansasii	Human disease (pulmonary)	I
Mycobacterium intracellulare	Human disease (pulmonary)	III
Mycobacterium fortuitum	Pulmonary disease (rare)	IV
Mycobacterium scrofulaceum	Human disease (adenopathy)	II
Mycobacterium avium	Human disease (rare)	
Mycobacterium bovis	Human disease (rare)	
Mycobacterium leprae	Leprosy	
Mycobacterium xenopi	Pulmonary disease (rare)	
Mycobacterium marinum	Swimming pool granuloma	I
Mycobacterium ulcerans	Chronic skin ulceration	
Mycobacterium gastri	Saprophyte	III
Mycobacterium nonphoto-chromogenicum	Saprophyte	III
Mycobacterium terrae	Saprophyte	III
Mycobacterium triviale	Saprophyte	III
Tap water scotochromogen	Saprophyte	II

UNRAVELING THE PROBLEM

In the past, we have considered that all of these diseases were simply "tuberculosis." The evolving concept is to regard each of the mycobacteria and the disease which it causes as an entity and not to simply lump all of them into one common category. There are certain generalizations, though, which can be made from a study of all of the mycobacterial diseases. A thorough understanding of these tenets is essential to the comprehension of these diseases.

1. *Acid fast smears.* It has become clear in the past several years that we have become too sophisticated in our knowledge of tuberculosis to base the diagnosis of tuberculosis solely on the basis of a positive smear for acid fast bacilli (AFB). As has been previously stated, there can be many AFB in sputum and gastric washings which are saprophytic and not pathogenic. Some others, such as Mycobacterium scrofulaceum, can be commensal organisms at times and, therefore, not clinically significant. We must, therefore, insist on acid fast cultures. The laboratory must be able to identify the organisms which are present by species. The simplest way of differentiating all other organisms from Mycobacterium tuberculosis is the niacin test. As has been pointed out, the only mycobacterium which gives a positive niacin test is M. tuberculosis.

2. *Interpretation of the PPD skin test.* We are aware that there is a cross reaction to the various PPD antigens. One must be cautious then in the interpretation of a positive PPD-S skin test. A mantoux reaction greater than 10 mm most likely indicates an infection with the specific organism from which the PPD is derived. The questionable reaction between 6 mm and 9 mm may, very well, represent a cross reaction to one of the other mycobacteria. These reactions should be checked with differential skin testing to establish the specific organism.

3. *The role of drugs.* The treatment of the mycobacterial diseases has to be individualized. The fact that there is complete or partial drug resistance to the primary antituberculous drugs in most of the diseases, other than that caused by M. tuberculosis, makes this evident. This emphasizes the need of cultures and good drug sensitivity testing. Drug therapy cannot be 100% effective if it is emperical. The vast majority of cases due to Mycobacterium tuberculosis will be cured with drug therapy alone. With the use of Rifampicin (an antituberculous drug of great promise which has not yet been released), the cure rate will be even higher.

4. *The role of surgery.* With the improvement of chemotherapy, there has been less surgery done for the control of Mycobacterium tuberculosis. While the trend has been away from surgery in this disease, the opposite is true in some of the other mycobacterial diseases. There is an increasing reliance on resectional surgery in cases due to Mycobacterium intracellulare and Mycobacterium kansasii. Surgery is indicated more often in these diseases because of the relative failure of chemotherapy to effect a cure. Those patients who have localized disease are candidates for resectional therapy.

5. *Communicability.* Probably the most important distinction to be made for the patient is the non-transmission of most of these diseases. There has never been a reported person to person spread of Mycobacterium kansasii, Mycobacterium intracellulare, Mycobacterium fortuitum or Mycobacterium scrofulaceum, which are the non-mammalian tubercle bacilli. This means that the patient does not have to be isolated when the diagnosis is made. This is a further challenge

to make the proper diagnosis in order to save a patient's time, money, morale, etc. There are many cases of these diseases who will need hospital treatment because of the extent of their illness. Many other patients, though, can be treated at home or even at work without a disruption of their normal activity. Since there is no person to person transmission, the source of these organisms would appear to be the environment. There have been isolation from soil, water, etc. This raises another question as to the factors which give a person susceptibility.

SUMMARY

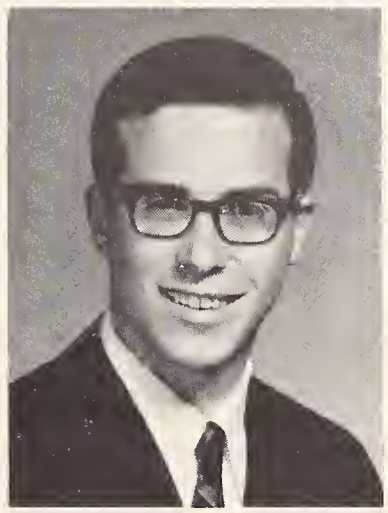
Enough is known about the so-called "atypical" mycobacteria that the original Runyon classification can be updated. The mycobacterial diseases, which have been reviewed, should be considered as individual entities. In light of this evolving concept, the role of: the acid fast smear, the PPD skin test, drug therapy, and surgical therapy have been discussed. The lack of person to person transmission of these mycobacteria has been stressed.

BIBLIOGRAPHY

1. Hobby, G: A look at atypicals. American Review of Respiratory Disease 96:357-360, 1967.
2. Runyon EH: Anonymous mycobacteria in pulmonary disease. Medical Clinics of North America 43:273-290, 1959.
3. Wayne LG, Runyon EH, Kubica GP: Mycobacteria: a guide to nomenclature usage. American Review of Respiratory Disease 100:732-734, 1969.
4. Corpe RF, Runyon EH, Lester W: Status of disease due to unclassified mycobacteria. America Review of Respiratory Disease 87:459-461, 1963.
5. Pellmen CM, Runyon EH: The significanse of mycobacteria other than tubercle bacilli in the urine. American Review of Respiratory Disease 90:243-247, 1964.
6. Edwards LB, Acquavivafa, Livesay VT, Cross FW, Palmer CE: An atlas of sensitivity to tuberculin, PPD-B, and histoplasmin in the United States. American Review of Respiratory Disease 99: 1-132, part II, 1969.
7. Holliday WB, Rhoades ER: A comparison of reactor rates to atypical mycobacterial antigens in air force recruits reacting to the tine test. American Review of Respiratory Disease 93:907-911, 1966.
8. Kendig, EL Jr.: Unclassified mycobacteria. New England Journal of Medicine 268:1001-1002, 1963.
9. Klinenberg JR, Grimly PM, Seegmiller JE: Destructive polyarthritis due to photochromogenic mycobacteria. New England Journal of Medicine 272-190-193, 1965.
10. Huempfner HR, Kingsolver WR, Deuschle KW: Tuberculous meningitis caused by both mycobacterium tuberculosis and atypical mycobacteria. American Review of Respiratory Disease 94:612-614, 1966.
11. Diagnostic Standards and Classification of Tuberculosis. The National Tuberculosis and Respiratory Disease Association, 1969.
12. Hobby GL, Redmond WB, Runyon EH, et al: A study of pulmonary disease associated with mycobacteria other than mycobacterium tuberculosis. American Review of Respiratory Disease 95:954-971, 1967.
13. Pfuetze KH, Vo LV, Reimann AF, et al: Photocromogenic mycobacterial pulmonary disease. American Review of Respiratory Disease 92:470-475, 1965.
14. Phillips S, Current Problems in Tuberculosis. Charles C. Thomas, 1966, pp 69-80.
15. Dross IC, Abbatiello AA, Jenney FS, et al: Pulmonary infection due to Mycobacterium fortuitum. American Review of Respiratory Disease 89:923-925, 1964.
16. Guest JL Jr., Arean WV, Brenner HA; Group IV atypical mycobacterium infection occurring in association with mineral oil granuloma of lungs. American Review of Respiratory Disease 95: 656-662, 1967.
17. Canilang B, Armstrong D.: Subcutaneous abscesses due to mycobacterium fortuitum. American Review of Respiratory Disease 97:451-454, 1968.
18. Joos HA, Hilty LB, Courington D., et al: Fatal disseminated scotochromogenic mycobacteriosis in a child. American Review of Respiratory Disease 96:795-801, 1967.
19. Marsden HB, Hyde WA, Anonymous mycobacteria in cervical adenitis. Lancet 1: 249-250, 1962.

SPONTANEOUS RUPTURE OF ESOPHAGUS

This article calls attention to a rare condition which can be treated successfully by surgery if the diagnosis is made early, but with a high mortality in delayed diagnosis. The two cases reported illustrate very well the difficulties of early diagnosis if the index of suspicion is not high, but the classical symptoms and signs as given are so characteristic that a diagnosis can be made over the phone and quickly confirmed by a swallow of contrast medium and an X-ray. Immediate surgical repair is usually successful if performed within twenty-four hours but the so-called "spontaneous rupture" occurs in the diseased and weakened esophagus which may prevent primary union repair. Adequate drainage is essential.



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Esophageal rupture as a spontaneous occurrence is a rare manifestation of changes in hydrodynamic pressure from within, in an otherwise normal esophagus. The management of esophageal rupture can be altered dramatically and mortality lessened by early diagnosis and positive therapy. The purpose of this report is to present two cases of spontaneous esophageal rupture and to demonstrate some of the roentgenologic and clinical signs helpful in early diagnosis.

In 1724 Herman Boerhaave described the first case of ruptured esophagus in the world's literature, occurring in a Dutch admiral who had been vomiting and suddenly complained of severe upper abdominal pain and shortly thereafter died. The autopsy revealed a 2 cm. rent in the distal esophagus.[2] Since that time there have been several case reports all giving poor survival statistics. By 1960 there were 250 cases reported in the world's literature with a survival rate of about 20%.

Case #1: A 59-year-old Negro male was admitted to the hospital with a chief complaint of vomiting for about 18 hours prior to admission. This persisted and was accompanied by severe pain in the upper abdomen just prior to admission. Blood in the vomitus was noted on admission. The pain was worse in the anterior chest and epigastrium. The physical examination revealed a distended abdomen with absent bowel sounds. Diffuse tenderness was noted over the abdomen. There was no history of alcoholism. Initially there was an episode of respiratory distress and the patient was put on digitalis for congestive heart failure. A chest radiograph was performed and showed a small amount of mediastinal air. (Fig. 1) Abdominal x-rays also showed the mediastinal emphysema (Fig. 2). During the next two days the chest pain persisted and interscapular pain developed. There was bloody drainage from the nasogastric tube. On the third hospital day another chest radiograph demonstrated extensive bilateral hydropneumomediastinum and hydrothorax (Fig. 3). A gastrografin swallow on the same day demonstrated the perforation with leakage of contrast into the left mediastinal space (Fig. 4). Surgery was performed and a three centimeter laceration was found in the anterolateral esophagus just above the dia-

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phragm. There was extensive pleural and mediastinal fluid. Following a stormy postoperative course, the patient recovered satisfactorily.

Case #2: A 53-year-old white male was admitted to the hospital via the Emergency Room with a three-day history of diarrhea which became melena the night before admission, and was accompanied by vomiting of brown-black material. He then developed severe abdominal pain, back pain, and left scapular pain; accompanied by vomitus of dark red and bright red blood. He presented to the Emergency Room in shock with an acute abdomen. The patient was a known heavy drinker and had a duodenal ulcer seven years ago. Chest and abdominal roentgenograms were performed and were negative. He was taken to surgery and a cholecystectomy was performed without other findings in the abdomen. Following surgery the patient became cyanotic and developed respiratory acidosis. A chest roentgenogram revealed almost complete opacification of the left hemithorax and mediastinal emphysema (Fig. 5). He died shortly afterward. At autopsy a large amount of brownish-black fluid was found in the mediastinum and left pleural space; a distal esophageal perforation accompanied by two mucosal lacerations was discovered (Fig. 6).

DISCUSSION

The etiology and pathogensis of spontaneous esophageal rupture are related to several factors. Several anatomic studies using cadavers have been reported which demonstrate esophageal pressures ranging from 3.6 lb./sq. in. as necessary to cause rupture.[3, 6] In dissection of the distal one-third of the esophagus it was shown that muscle fibers become tapered and conical and at the site of the entrance of nerves and vessels the muscle is thin and weak. In experimental rupture, the muscle weakens, first causing ballooning of the mucosa followed by rupture.

In order to produce sufficient pressure to cause esophageal rupture, increase in intra-abdominal pressure must occur against a closed cricopharyngeal orifice. The act of vomiting, being entirely reflex in origin, consists of contraction of the pre-pyloric portion of the stomach followed by complete relaxation of the stomach and esophagus. With lowering of the diaphragm and contraction of the abdominal musculature, stomach contents are propelled through the esophagus and out the mouth through an open pharynx. With prolonged vomiting it is felt that



Figure 1
Case #1: Admission chest radiograph showing small amount of mediastinal air in the left lower mediastinum behind the heart.



Figure 2
Case #1: Upright abdomen showing mediastinal emphysema to better advantage.



Figure 3
Case #1: Chest on third hospital day showing extensive bilateral hydropneumomediastinum and hydrothorax.

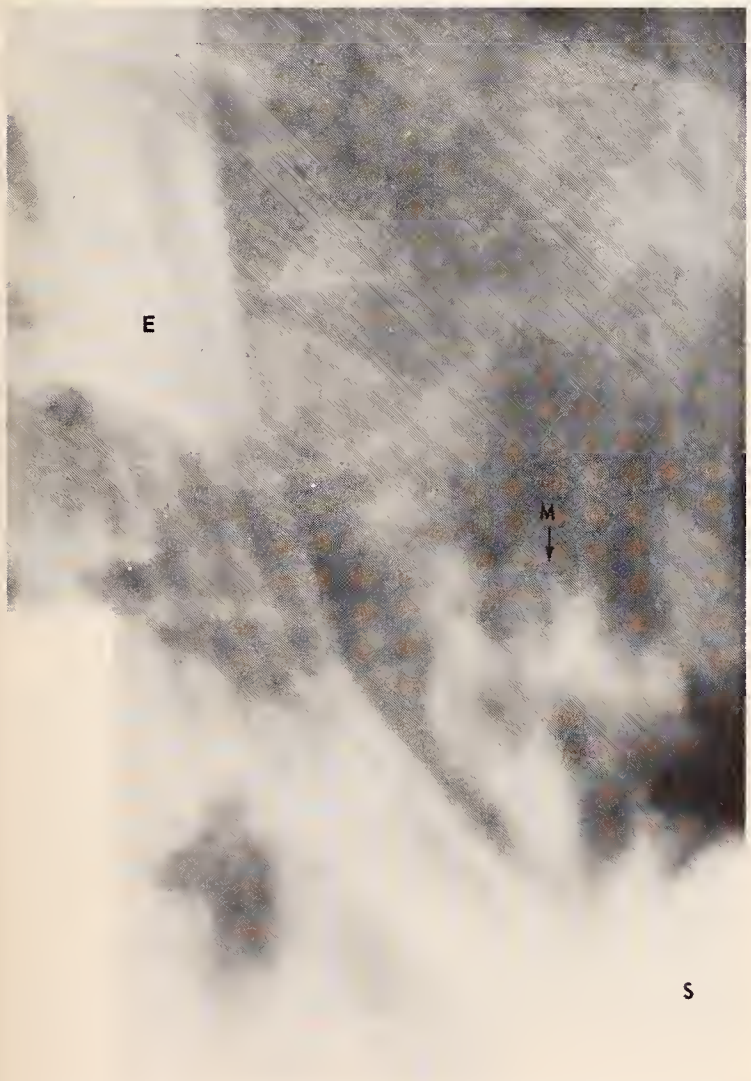


Figure 4
Case #1: Spot film of esophagus (E) showing collection of contrast material (M) in the mediastinum to the left of the esophagus. Stomach labelled (S).



Figure 5
Case #2: Chest radiograph following surgery showing extensive hydrothorax and small amount of pneumomediastinum to the right of the heart.



Figure 6
Case #2: Autopsy specimen of esophagogastric junction showing perforation of esophagus (Arrow 1) and two lacerations (Arrows 2 and 3). Note large artery in the center of the perforation.

there may bc fatigue of the reflex action, with subsequent increase in intra-abdominal pressure against a closed cricopharyngeal opcning, causing rupture.[6] In addition, certain predisposing factors may contribute to esophageal rupture. Those felt to be important are alcoholism, peptic esophagitis, csophgeal stricture and neurologic disorders. The common fcature, however, is vomiting for extended periods of time, followed by pain.

There have been case reports of spontaneous rupture of the esophagus without vomiting, indicating a rclationship to peptic esophagitis and esophageal laceration (Mallory-Weiss Syndrome). Mallory-Weiss syndrome may be classified then, as an incomplete rupture of the esophagus, followed by less florid symptoms and signs.[11]

The predominant age range is 40-60 years and males outnumber females in most scries. The initial symptom most often is vomiting, with nausea, pain and hematemesis also common. In most cases vomiting precedes the pain. The epigastrium is the most common site of the pain with primary chest pain, and combined chest and abdominal pain also noted. The pain is usually sharp, and in most cases radiates to the substernal area, epigastrium, left chcst, shoulder or back. Dyspnca is also a eommon symptom.[1] As was seen in the two cases presentcd, both pain and vomiting are predominant symptoms, and this often results in confusion with other chest and abdominal disorders as: myocardial infarction, ruptured aortic aneurysm, perforated gastric or duodenal ulcer, acute cholecystitis, etc.

Physical findings are usually minimal until there is progress of pathology; and at that time will inelude rales or whcezing in the chcst, palpable subcutaneous cmphysema and abdominal tenderness or rebound.

The radiographic findings with rupturcd esophagus on chest and abdominal roentgenograms are varied. In case #1, a more classic pattern is seen with mediastinal emphysema progressing to hydrothorax and hydropneumomediastinum (Figs. 1-3). The sccond case demonstrates massive hydrothorax with evidence of a small pneumomediastinum (Fig. 5). The four basic patterns of roentgen findings are hydrothorax, hydropneumothorax, mediastinal and subcutaneous emphysema and atelectasis.[8, 9] The usual sitc of perforation is on the left lateral wall of the distal esophagus, and mediastinal emphysema is usually the first roentgen sign. Thc mediastinal emphysema may be obscured by the heart, however, and it is advisable to obtain an overpenetrated film of the chest for better detail. In addition, a chest x-ray should be obtained in conjunction with an abdominal x-ray in any case of undiagnosed upper abdominal pain.

The mediastinal emphysema may progress to subcutaneous emphysema after several hours. The hydrothorax is most often on the left, but may bc bilateral, or on the right in a small percentage. This is especially true with prolonged delay in diagnosis. In infants, the perforations reported have all been into the right pleural space because of the right sided position of the esophagus.[5]

A contrast medium esophagram should be performed for final confirmation of the diagnosis. Water soluble contrast media are preferred; but sincc there will eventually be surgery and irrigation of the area, if there is doubt about the diagnosis a small amount of barium may be used.

SUMMARY

Two cascs of spontaneous esophageal rupture are presented and the etiology, pathogenesis and clinical and roentgen signs are discussed. Early diagnosis is the most important factor in survival. Prolongcd vomiting in a patient with a predisposing factor such as alcoholism, is the most common cause. Chest and abdominal radiographs should be obtained in any patient with this history who develops abdominal or chest pain. The roentgen findings are most commonly pneumomediastinum followcd by hydropneumomediastinum and hydrothorax. A contrast medium esophagram confirms the diagnosis.

REFERENCES

1. Abbott, O. A., Mansour, K. A., Logan, W. D., Hatcher, C. R., and Symbas, P. N., Atraumatic So-called "Spontaneous Rupture of the Esophagus." J. Thor. and Cardisvasc. Surg., 1970,59, 67-83.

2. Boerhaave, H., Atrocis, nec descripti prius, Morbi Historia. Secundum Medical Artis Leges Conscripta. Ludg. Bat., Balav, 1724.

3. Brackney, E. L., Campbell, G. S., Thal, A. P., and Wangensteen, O. H., Spontaneous Perforation of the Esophagus; Experimental Study. Proc. Soc. Exper. Biol. and Med., 1955, 88, 307-310.

4. Brownstein, E. G., Spontaneous Rupture of the Distal Thoracic Esophagus. Med. J. Australia, 1969, 1, 849.

5. Hohf, R. P., Kimball, E. R., and Ballenger, J. J., Rupture of the Esophagus in the Neonate. J.A.M.A., 1962, 181, 939-943.

6. Mackler, S. A., Spontaneous Rupture of the Esophagus, an Experimental and Clinical Study. Surg., Gyn., and Obst., 1952, 95, 345-356.

7. Mosher, H. P., Lower End of the Esophagus at Birth and Anatomic Concepts in the Adult. J. Laryng. 1930, 45, 161.

8. Panaro, V. A., and Leshe, E. S., Spontaneous Rupture of the Esophagus. Radiology, 1965, 84, 252-285.

9. Priviteri, C. A., and Gay, B. B., Jr., Spontaneous Rupture of the Esophagus, with Report of Five Cases. Radiology, 1951, 51, 48-57.

10. Reynolds, J. and Davis, J. T., Injures of the Chest Wall, Pleura, Pericardium, Lungs, Bronchi and Esophagus. Rad. Clin. of North America, 1966, 4, 398-401.

11. Smulewicz, J. J., Kovac, A. and Gamponia. H., Spontaneous Rupture of the Esophagus. Am. J. Gastroent, 1969, 51, 317-321.

12. Stephenson, H. E., Jr., McLeod, R. A., McCraw, J. B., Mackenzie, J. W., MacDonald, W., and English, M. T., Perforation of the Esophagus, Am. J. Surg., 1968, 115, 548-650.

BASALOID TUMORS OF ANAL REGION



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HISTORICAL BACKGROUND

Since 1956 when Grinvalsky[1] called attention to the different histological patterns of epithelial tumors of the anorectal area it has become obvious that the previous classification of anorectal neoplasms has been inadequate. In addition to the more commonly diagnosed histological types – epidermoid carcinoma, basal cell carcinoma, and adenocarcinoma, another histological variant has become increasingly identified in recent years by different names – "basaloid tumors", "basaloid-squamoid carcinoma", "cloacogenic cell carcinoma", "undifferentiated carcinoma", and transitional cell carcinoma".

Herrmann and Desfosses[2] described the gross and microscopic anatomy of the anorectal canal in 1889, and Tucker and Hellwig[3] described the comparative and developmental anatomy of this area in 1935. More recently (1956), utilizing twenty-five abdominal perineal resections, Grinvalsky described in detail the microscopic anatomy of the anorectal junction and again called attention to the transitional zone of epithelium located between the rectal mucosa and the squamous epithelium of the anus, reaffirming its importance as the possible source of these tumors.

In 1957 Wittoesch[3] became the first to classify these anal epitheliomas as "basaloid" tumors be-

cause of their microscopic similarity to basal cell epitheliomas of the skin with which, however, they must not be confused, and from which they must be differentiated.

CASE REPORTS

1. A 76-year-old white male was hospitalized in 1967 because of rectal bleeding, pruritus ani, and an anal mass. Two months previously he developed perianal itching and noticed blood on his stool. Physical examination revealed a short, obese, 76-year-old white male weighing 249 lbs. BP was 170/115. There was an exophytic, firm, ulcerated tumor visible in the anal canal, involving more than one-half of the circumference, invading the levator ani muscle, and extending the length of the anal canal. Proctosigmoidoscopy to 25 cm. was otherwise negative. Groin node-bearing areas were clinically negative. No abnormal masses were felt in the abdomen, and the liver and spleen were not felt. Barium enema and laboratory blood studies were normal except for a borderline elevated 17 hydroxy-corticoid determination. Ten days after admission an abdominal perineal resection was performed, but pelvic node dissection was not done because of his extreme obesity and advanced age. No enlarged lymph nodes or gross visceral metastases were found at operation. The microscopic diagnosis was "basaloid tumor, showing mixed basaloid and squamous features with positive lymph nodes and negative margins of resection." Following a benign convalescence he was discharged with a healing perineal wound. He remains free of clinical evidence of recurrent disease 3 years later.

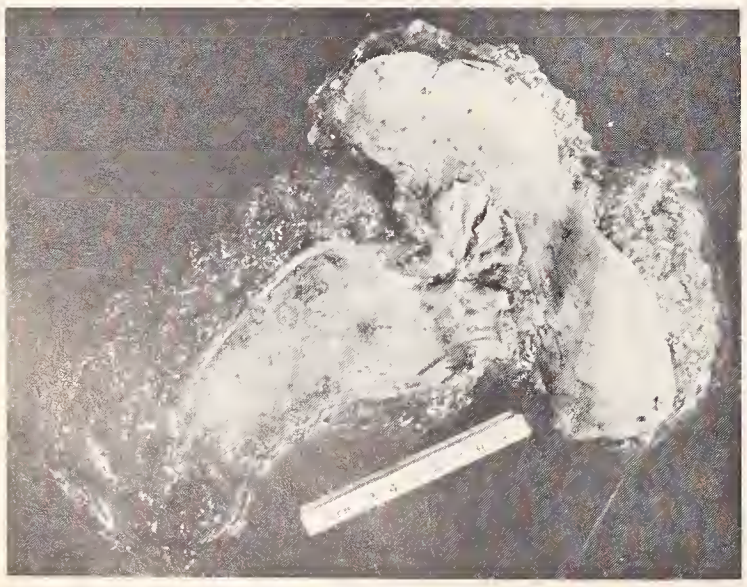


Figure 1 — (Case 1)

The gross appearance of a basaloid tumor is not distinctive, and clinical features cannot be used to differentiate it from other anal cancers. This case was treated by abdominal perineal resection.

2. A 73-year-old white male was hospitalized in 1967 for a painful perianal sore which was present for nearly 2 years. For sixteen months he had applied topical anesthetics and various ointments to the lesion, which was moist, itchy, and painful. He had not had any rectal bleeding, constipation, or excessive flatus. Except for a prior suprapubic prostatectomy for benign prostatic hypertrophy and mild hypertension of 8 years duration, he enjoyed good health. On physical examination a well-healed surgical scar was present in the suprapubic area, and no abnormal abdominal masses were felt. Lymph node-bearing areas in the groin were negative to examination. Rectal examination revealed a 6 x 4 cm., slightly raised, red-gray, moist skin lesion extending from the perineal area into the anus for a distance of 2 mm. The levator ani muscle was not invaded. Proctosigmoidoscopy to 25 cm. was negative. Barium enema and blood studies were normal. Biopsy of the lesion was interpreted as "basal cell carcinoma." On the third day after admission the mass was locally excised, and a split thickness skin graft was applied. Post-opera-



Figure 2 — (Case 2)

The perineal location of this "in-situ and superficially invasive basaloid tumor" is somewhat unusual. A biopsy of it was diagnosed as a basal cell epithelioma. However, basal cell cancers of this area are rare, and the surgeon must beware of the pitfall of treating the more lethal basaloid tumor as a basal cell cancer. The biopsy in this case was erroneous. This case was treated by local excision.

tively some loss of the graft occurred, but that area of slough healed by secondary intention without incident. The microscopic pathology was "in situ and superficially infiltrating basaloid tumor with negative resection margins." The patient was discharged after the perianal area had healed, about 10 days following operation. He remains free of clinical evidence of recurrence of the tumor 3 years later.

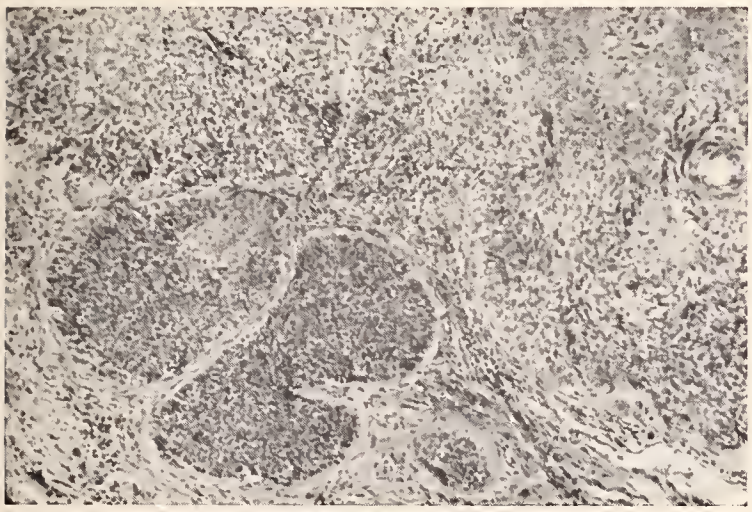


Figure 3
A photomicrograph of case 2

(In-situ and superficially invasive-basaloid tumor) shows the microscopic resemblance to basal cell epitheliomas. There is a pattern of hyperchromic, closely packed, small cells with regular nuclei arranged in palisading fashion. Pure basaloid tumors generally lack keratinization.

HISTOPATHOLOGY

The microscopic resemblance to basal cell epitheliomas of the skin led to the term "basaloid" to describe these tumors. True basal cell cancers of the anorectal and perianal skin, however, are rare; only 10 were seen at the Mayo Clinic between 1929 and 1955.[3] Basal cell epitheliomas can be readily recognized by their typical histology and generally should not be microscopically confused with basaloid tumors. Like basal cell tumors, the basaloid type may show considerable histological variation, but basal cell cancers arise from the basal layer of the epidermis or hair follicle and are composed of closely-packed, small, hyperchromic cells with regular nuclei arranged in palisaded fashion. Mitoses are typically frequent. Basaloid tumors also exhibit a pattern of palisading similar to basal cell carcinomas, but their nuclei are larger and more anaplastic than basal cell epitheliomas. Pure basaloid tumors lack keratinization.

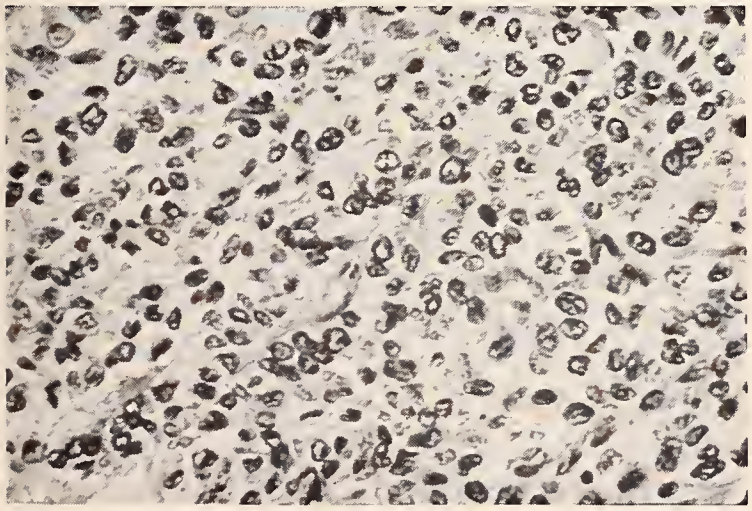


Figure 4
A highpower photomicrograph of Case One. An admixture of squamous and basaloid elements frequently occurs. Basaloid tumors may show considerable histological variation. Their nuclei are larger and more anaplastic than basal cell epitheliomata.

Pure basaloid elements exist in 20% in anal tumors, but basaloid and squamous elements frequently co-exist. In fact, Lone[4] has reported that fifty per cent of all anal tumors contain both squamous and basaloid elements. This frequent admixture may help explain the past infrequent reporting of this type of tumor; the microscopic diagnosis may often be made in the predominant cell type, and a small basaloid focus would be ignored.

Some reports have called attention to the resemblance of basaloid tumors to transitional cell carcinomas of the bladder, but the cells of basaloid type tumors contain less cytoplasm and have larger nuclei than transitional cells of the urinary bladder.

HISTOGENESIS

The anal canal is a complex anatomical structure, the microscopic composition of which has been carefully studied and described in recent years. Although a detailed description is beyond the scope of this report, the knowledge of the origin of these tumors is pertinent and may assist in their evaluation, treatment, and prognosis, and, for this reason, its anatomy will be briefly mentioned.

The surgical anal canal extends from the anorectal muscular ring 4-6 cm. distally to the anal verge (the margin of anal skin where hair follicles are absent). Within this area is the dentate line, which can be identified by its marginal structures — the rectal columns, (which are continuous with the anal columns), the anal valves, and anal crypts.

The epithelium of the rectum is true columnar proximally, gradually transforming into a more cuboidal type distally and changing over several millimeters across the dentate line into a squamocuboidal type, which covers the anal columns

and crypts. Microscopically, there is a histological transitional zone 3-10 mm. in length and 5-7 cells in thickness which is made up of stratified columnar epithelium which exhibits a gradual change from columnar to squamous epithelium. Squamous epithelium may even be identified above the dentate line. Below the dentate line the anal canal is lined with thicker squamous epithelium that lacks mucus, sebaceous, or sweat glands. This squamous epithelium then blends insensibly with the perianal skin, which contains excretory, apocrine, glandular, and follicular elements. Beneath the epithelium of the anal canal and lower rectum are simple tubular glands lined by transitional or stratified simple epithelium that extend into adjacent tissues, including both the spinchteric muscle, the anal crypts, and perianal skin.

This transitional zone between the rectal mucosa and epidermis of the anus was considered by Herman and Desfosses to represent a remnant of the cloaca, and this concept has given rise to the term "transitional cloacogenic" to all tumors, regardless of cell type, that originate in this area and that do not fit the histological classification of epidermoid carcinomas.

The question has arisen whether cloacogenic carcinoma is a malignant lesion of one cell type or a group that should be subdivided into tumors of different cell types, and whether basaloid tumors represent but one type of cloacogenic carcinomas.

From what information is available at the present time continued use of the term basaloid seems appropriate until further knowledge of whether all histological variants should be grouped together or subgroups created is forthcoming. Furthermore, the term basaloid is helpful because it calls attention to a histological type different from epidermoid carcinoma of the anus and differentiates it from the ordinary basal cell carcinoma of the perianal skin. It is of interest that a recent report of the examination of the ultra-structure of basaloid tumors by the use of electron microscope has related the cytogenesis of this type of tumor to the basal cell elements rather than the stratified columnar epithelium, per se.[5]

INCIDENCE

Malignant anal canal cancers are rare, comprising no more than 5% of all carcinomas occurring in the combined colon, rectum, and anus. Lone et al, in their review of all of the available histological material of primary anal cancers at Memorial Hospital over an 18-year period, found that 20% of these tumors were purely basaloid, which corresponds to a more recent report of the experience at St. Mark's Hospital in London by Pang and Morson.[6] Lone further found that 50% of all of the primary anal tumors examined showed some basaloid foci. However, the true incidence of these tumors in all institutions cannot be accurately determined until agreement is reached on a universally acceptable classification and nomenclature that differentiates this tumor variant from epidermoid cancers of the anus. In the past these tumors have most likely been classified under the category of either squamous cell cancers or even erroneously as basal cell tumors. Furthermore, small foci of this variant may be missed, and the microscopic diagnosis given on the basis of the more predominant cell type. Undoubtedly with increased recognition of this cell type the reported incidence of these cancers will rise.

CLINICAL FEATURES

Basaloid tumors occur more often in women than in men in most reported series,[4, 7,8, 9, 10] in a ratio of 2 to 1 or 3 to 1, and more often in whites than in Negroes. The reported age distribution ranges from 41-81 years of age. As in epidermoid tumors of the anus, they most commonly affect those in the sixth and seventh decades.

Basaloid tumors may occur anywhere in the anal canal and their gross appearance is not distinctive enough to differentiate them from other anal types. They may present as large interluminal masses, but they often tend to present as small lesions which may be ulcerated. Rectal bleeding is a common complaint but constipation may be the presenting symptom. Pain with bowel movements is common. Although pruritis ani is reportedly uncommon, both patients presented in this report complained of itching. Moreover, the perianal location of the tumor in the second case is somewhat unusual in that its location might suggest a pure basal cell type arising from the perianal epidermis and, indeed the initial biopsy was interpreted as basal cell carcinoma. The rarity of basal cell carcinomas in this area should lead one therefore to be suspicious of this diagnosis in tumors in this area and suspect that a basaloid cancer may actually be present. Adequate biopsies, therefore are essential.

Although the clinical features are not characteristic enough to distinguish this type of anal

cancer from other varieties, a recent study[12] of the radiographic appearance of 7 cases has demonstrated that the similarity was striking enough to make the diagnosis by barium enema in 6 cases.

PROGNOSIS

The prognosis of basaloid carcinomas of the anus is better than that of epidermoid carcinomas of the anus.[4] In a review of 73 patients having epidermoid carcinoma of the anal region Stearns[11] reported that 41% of the patients treated for cure and who could be traced, survived for five or more years. The five-year survival reported by Lone & Associates for basaloid carcinomas of the anus was significantly better in cases when pure basaloid elements were present (57% at the end of 5 years), but the mortality increased where basaloid and epidermoid or squamous elements coexisted (24% living at 5 years). However, in all cases, tumors that contained basaloid elements showed an increased survival over those that showed no basaloid elements, and where nonbasaloid elements existed, these cancers killed sooner. In general, then, it can be concluded that these tumors behave in a less aggressive manner than other cancers in this area. Obviously, however, the most important determination of the final outcome is the presence or absence of metastases at the initial treatment. But here again, even where metastases to lymph nodes was present, patients with this type of low-grade lesion live longer.

The ultimate clinical course of basaloid tumors appears to be dependent both on the extent of the lesion, including its local invasiveness and the presence of metastases at initial treatment, as well as the histological typing. The histological typing, therefore, can only be used as a guide to the expectation of metastases and prognosis since the final outcome is determined by the stage of the disease.

Other reports[3, 6, 10] of this kind of tumor have related the prognosis to the differentiation of the tumor. Where very anaplastic elements occurred, the prognosis seemed to be very poor, regardless of the presence or absence of metastases. Anaplastic basaloids were commented upon by Wittoesch who noted that the prognosis of the "small cell" type was extremely poor. This has been noted also by Pang and Morson[6] who have divided the basaloid tumors according to the degree of maturation. Those tumors that showed palisading as a well recognized feature with absence of infiltration were associated with a good prognosis (90% 5 years survival), but in Pang's series there were no survivors in the group of anaplastic basaloid tumors even when lymphatic metastases were absent. This is lower than the 5-year survival reported by Lone et al even in the most unfavorable situation where no basaloid focus was present (27%).

TREATMENT

The treatment of anal canal cancer is not standardized. These lesions are rare cancers, and no single institution has sufficient experience in the treatment of these cancers. There is no evidence to suggest that the treatment of basaloid tumors should not be the same as that of epidermoid cancers.

The best chance of cure is surgical excision. Irradiation and chemotherapy are only of palliative value, although the use of pre-operative radiation in extending the survival has not been fully evaluated. Local excision has been advocated as a curative method of treatment in both epidermoid carcinoma[11] and basaloid tumors[12] of the anal region. This form of conservative surgical excision has been recently reviewed.[13] Small superficial lesions that do not demonstrate any gross invasion of contiguous structures or nodal metastases, and which can be excised with a safe margin around the entire circumference of the tumor have been cured, and local excision was used as the method of treatment in case #2 herein reported. Obviously, the individual case must be carefully selected if this treatment is chosen. About one-third of the patients having local excision performed for cure in epidermoid anal cancers are permanently cured. Furthermore, local recurrences can oftentimes be controlled by further local excision or even abdominal perineal resection, but Stearns has emphasized that a certain number of deaths will occur due to inadequate initial surgery.[11] Not only must this be taken into consideration in the treatment of anal tumors by local excision, but if this treatment is selected, careful follow-up inspection of the operative site is absolutely imperative.

The comparison of the results of local excision with abdominal perineal resection of the rectum cannot be made in view of the fact that only patients whose lesions were small and suitable for local excision would be subjected to this form of treatment. Elective or so-called prophylactic superficial groin dissection at the time of initial treatment has not increased the survival in epi-

dermoid carcinoma of the anus.[11] The presence of inguinal node metastases at the time of discovery of the anal tumor carries with it a very poor prognosis, and no patients have been salvaged who had inguinal node metastases at their initial treatment. If groin metastases appear at a later date, these patients can be salvaged by therapeutic groin dissection at that time. There is no evidence to indicate that this concept is not applicable to superficial basaloid tumors. The radical groin dissection should be performed only when metastases become clinically evident. In epidermoid anal cancer superficial groin metastases are present in 45% of cases,[11] which closely corresponds to that seen in basaloid cancers.[10]

The surgical procedure of choice of a large anal cancer is abdominal perineal resection unless there is a medical contraindication. A 50% five-year survival rate can be expected with this form of treatment in both epidermoid cancer[11] and basaloid cancer.[4, 6]

Metastases occur to the pelvic lymph nodes in epidermoid carcinoma of the anal region approximately 47% of cases and 55% in basaloid.[10] This includes metastases to the nodes of the common external and internal iliacs and the obturator nodes.[11] The frequency of metastases to these nodes has led to the belief that a pelvic lymph node dissection (i.e. nodes not routinely removed by Miles type resection, including the sacral promontory, common, external, internal, iliac nodes, and obturator nodes) should be done at the time of the abdominal perineal resection. Although there is no statistical proof that a patient with metastases to these nodes can be salvaged by their removal, the present experience is too small to suggest that this will not improve survival. Although the additional dissection would be expected to increase both the operative time and morbidity of the operation, increased salvage would justify this radical approach. Until more pelvic node dissections are done at the time of the abdominal perineal resection its place in the treatment of any anal cancer cannot be adequately evaluated or its value assessed.

SUMMARY

Two cases of basaloid tumors of the anal region and their clinical features are presented. In contrast to previous reports of the rarity of this lesion, careful histological examination of anal neoplasms indicates that 20% of all anal cancers show pure basaloid elements and that up to 50% may show some basaloid foci. A mixture of basaloid and epidermoid elements often co-exist.

Available information supports the concept that these tumors arise from the endodermal-ectodermal junction (transitional cloacogenic zone). Continued use of the term basaloid for them is supported by the microscopic anatomy and more recently by the examination of the ultrastructure of these tumors. They must, however, be carefully differentiated from the rare basal cell epithelioma that occurs in the perianal area.

There is no reason to believe treatment of these tumors should be different from that of the epidermoid type. The preferred treatment is surgical excision; small tumors may be cured by local excision but those with invasion of surrounding structures must be treated by abdominal perineal resection. It is stressed that conservative excision demands close follow-up for recurrence. Elective or prophylactic groin dissection in anal cancers has not increased survival. Therapeutic groin dissection should be done at the time metastases become evident. It is suggested that pelvic node dissection be added when an abdominal perineal resection is done because of the frequency of metastases to these nodes. Experience with this has been meagre and only the increased use of this surgical approach will indicate its value in increasing survival.

Finally the prognosis of basaloid tumors excluding the most anaplastic type is better than that of other anorectal neoplasms. However, once metastases have occurred the prognosis is determined by the stage of the disease rather than by histological features.

REFERENCES

1. GRINVALSKY, H. T., and HELWIG, E. B.: Carcinoma of the anorectal junction; I ,histological consideration. **Cancer** 9:480-488, 1956.
2. HERMANN, G., and L. DESFOSSES, Sur la muguese de la region cloacale du rectum. C. R. Acad. Sci. (Paris) 90: 1301-1302, 1880.
3. TUCKER, C. G., & HELWIG, E. B.: Anal ducts: Comparative and developmental histology. **Arch. Surg.** 31: 521-530, 1935.
4. LONE, F., et al: Basaloid tumors of the anus. **Cancer** 13: 907-919. 1960.
5. FISHER, E. R., The Basal Cell Nature of The So-Called Transitional Cloacogenic Carcinoma of Anus As Revealed By Electron Microscopy. **Cancer** 24: 312-322, 1969.
6. PANG, L. S., and MORSON, B. C.: Bassaloid carcinoma of the anal canal. **J. clin. Path.** 20: 128-135.
7. GRODSKY, L.: Cloacogenic cancer of the anorectal junction. **Disease of the Colon and Rectum** 6:37-44, 1963.
8. CULLEN, P. K. and PONTIUS, E. E.: **Diseases of Colon and Rectum** 9:1-12, 1966.
9. KLOTZ, R. G. et al: Transitional cloacognic carcinoma of the anal canal. **Cancer** 20: 1727-1745, 1967.
10. SCHECHTERMAN, L.: Transitional cloacogenic carcinoma. **Am. J. Proct.** 11: 212-232, 1960.
11. STEARNS, M. W., Jr.: Epidermoid carcinoma of anal region. **Surg., Gynec., and Obst.** 106: 92-96, 1958.
12. GLICKMAN, M. G. and MARGULIS. A. R.: Cloacogenic carcinoma. Amer. J. Roent. 107:175-180, 1969.
13. EBY, L. S. and SULLIVAN, E. S.: **Diseases of Colon and Rectum** 12: 332-337, 1969.



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ANOTHER PROPOSAL FOR THE DELIVERY AND FINANCING OF HEALTH SERVICES

The Board of the American Hospital Association at its special session on December 2, 1970, voted to endorse in general the goals and concepts of Ameriplan which calls for a substantial restructuring of the nation's health care system. The full 92 page report is the result of efforts of a special committee chaired by Earl Perloff who is the Chairman of the Board of both the Albert Einstein Medical Center and of the Philadelphia General Hospital in Philadelphia. Stephen M. Morris, President of the Samaritan Health Service of Phoenix, Arizona and President-elect of the American Hospital Association, and three physicians were among those who participated on the fifteen member committee.

Ameriplan sets up Health Care Corporations in a manner that would require each HCC to develop a mechanism through which the community would be able to express its health needs and through which the Corporation could respond. Each individual in the HCC would have opportunities for representation in identifying how health services should be provided, in determining how care could be more accessible, and how the delivery of care could best support the dignity of the individual and his family. Both federal government and private financing would be used, and Medicare and Medicaid would be terminated. The plan also suggests a solution to the problem of establishing necessary standards and an organized system of delivery of health services throughout the nation.

ARIZONA MEDICINE commends the American Hospital Association for its Ameriplan. There is still much to be done in developing proper collaboration with the American Medical Association in the use of concepts of Foundations for Medical Care, and in the harnessing of constructive ideas advanced from other plans regarding these complex problems. We have confidence that the Nixon Administration will utilize this input of invaluable information and enact legislation within the next two years to provide comprehensive medical care for those who cannot afford it and to assist in strengthening of the entire spectrum of American Medicine in its increasingly complex role in modern society. The basic medical system is excellent, but it needs more adequate governmental assistance and also a public that understands that inflation is everyone's enemy.

John R. Green, M.D.

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THE RIGHT TO BECOME UNEQUAL



President's Page

Amidst all the furor of the equality of man, we may have lost an important concept. That concept is, all men may or may not be born equal, but they certainly are born with the right to become unequal.

For some, the right to this fact may be a long hard rocky road, for the start to inequality may, in fact, be unequal.

It would appear that with all the social and economic pressures being brought upon Society, the start may be becoming more equal, but in our foreseeable future, it doesn't appear it will actually ever exist as a fact.

After the start, and as you progress through school and life in general, this right to become unequal becomes evident immediately. Perhaps this is less so to the one inadvertently striving to this end and perhaps not even to his family or those that surround him, but it is in progress.

Many inequalities stand in our way to becoming unequal. Some of them are geographic, economic, social, educational, legislative, etc. We have always heard of and will continue to hear of success, for success is one of the proofs of becoming unequal—here is where mediocrity is lost. Here is where excellence is realized.

Medicine is also touched by this in many ways, for as you enter medical school, you may be in the eyes of some already unequal as you have passed them by. Others may, at this point, themselves may feel unequal for a different reason. Some schools are relatively unknown, while others are known around the world at a mere mention of their name. The fact that you graduated from a school like Harvard may put you a step up on me, a Creighton graduate. Here is where I may have to strive a little harder to become unequal, but I still have that right.

As you look around you, you see many people not only in medicine, but in all walks of life, who have taken advantage of this principle. Many have literally done it on their own, others with varying degrees of help.

The most important factor in this concept is the drive of the individual, for we know that, in fact, everyone is NOT created equal. They are not equal physically, emotionally or mentally, but remember in your area of life you, if you exercise it, have the unalienable right of becoming unequal.

Fred H. Landeen, M.D.
President

Dean's Page

THE UNIVERSITY HOSPITAL

The opening of the University Hospital at the Arizona Medical Center is naturally of interest and concern to all Arizona physicians. As the time for that event approaches, members of the Arizona Medical Association should find it helpful to know of the philosophy that will underlie the Hospital's operation.

The University Hospital was established by the Arizona Board of Regents to serve as a specialized resource in support of the health-related educational and training programs at the University of Arizona. Although its mission is highly specialized, its activation will, nevertheless, have a vigorous impact on the state and its role should be as widely known within the profession as possible.

Like other hospitals, the University Hospital will strive for excellence in patient care. However, the University Hospital is different from other hospitals in that it must meet the needs of academic disciplines rather than meeting sequential patient requirements. Stated, differently, the University Hospital must be organized and structured into academic and service units each of which has important areas in which it is autonomous for purposes of bed allocation, admission, discharges, educational and research programs, etc. The administrative and organizational patterns of the University Hospital will be structured to accommodate to these differences, not only for medicine, but for nursing, pharmacy and the allied health areas as well.

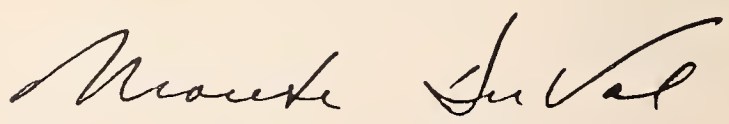
The University Hospital will be activated, slowly, to its full complement of 300 beds. On or shortly after July 1, 1971, 68 beds, distributed over the five major services of internal medicine, pediatrics, surgery, obstetrics-gynecology and psychiatry will be activated. The out-patient clinics will be opened at the same time.

Admitting privileges to the University Hospital will be limited to members of the hospital staff, a prerequisite for which will be appointment to the faculty of the College of Medicine.

We have estimated that there will be three primary sources of patients who will gain admission to the University Clinics or Hospital. First, and by far the most important, patients will be accepted on referral from practicing physicians or, under certain circumstances, from community-based health agencies, such as the Neighborhood Health Center. Second, certain patients can be expected to arrive at the Hospital in emergency circumstances. Care will obviously be provided in these situations although the patient's own physician will always be notified. Third, some patients will undoubtedly arrive at the Hospital as self-referrals. Those who have personal physicians will not be accepted at the University Hospital without their doctors' knowledge except at the insistence of the patient.

It is reasonable to expect that the daily cost in the University Hospital will be somewhat higher than that in other community hospitals. The Hospital will tend to attract patients who are sicker and who may present problems of an increased order of complexity than is usual. This is a proper function of a university hospital but it is also an expensive one. There will be a large intern and resident staff and, in addition to this, there will be certain teaching costs that are not ordinarily borne by community hospitals. The Arizona Board of Regents has indicated that it will do what it can to encourage the state to underwrite the educational cost of operating the Hospital but, beyond that, the Hospital is expected to operate as a self-sufficient enterprise. For this reason, patients admitted to the University Hospital will be expected to meet the cost of their professional and hospital care through such arrangements as may be appropriate in each instance.

Members of the Arizona Medical Association will undoubtedly wish to bring to our attention many questions not touched upon here. Certainly, it would be in order to address such questions to the Director of the Medical Center. Every effort will be made to provide answers where they are known.



ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

AD HOC COMMITTEE ON CONTINUING MEDICAL EDUCATION

Meeting of the Ad Hoc Committee on Continuing Medical Education of the Arizona Medical Association, Inc., held Tuesday, November 24, 1970, 810 West Bethany Home Road, Phoenix, Arizona convened at 7:14 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

ROLL CALL

PRESENT: Drs. Cohen, Melvin.; Crouch, Boyden L.; Grobe, James L., President-Elect; Jennett, Raymond J.; Melick, Dermont W.; Sattenspiel, Edward, Secretary; Stark, Robert E. T., Chairman; Wagner, Albert G.

EXCUSED: Drs. Crosby, David J.; Landeen, Fred H., President.

MINUTES

The minutes of the meeting held October 27, 1970 were approved as distributed.

JOINT ArMA - AMA ACCREDITATION

Dr. Stark reviewed letter received from C. H. William Ruhe, M.D., Director, Department of Continuing Medical Education, AMA, of November 11, 1970. It was suggested that consideration be given to joint accreditation visits to Arizona institutions which apply for accreditation of continuing medical education programs.

PROPOSALS

Dr. Raymond J. Jennett submitted the following for consideration:

"As you requested at our recent meeting, the following is a digest of my thoughts concerning the steps that should be taken to implement the standards for Continuing Medical Education as a basis for membership in the State Association.

"I think it has been repeatedly stated, whatever solution is forthcoming, that it must be **palatable** and **practical** for the rank and file membership of the Association or it will be doomed to failure. Therefore, I believe we should not lock ourselves into too rigid a format that would be unacceptable. In addition I believe that, whenever possible, uniformity in standards, with our other existing plans, should be established. A different standard for each specialty or standards difference from those of the AMA should be avoided. The period to fulfill requirements should be long enough to allow some flexibility. The three year period for the Physician's Award of the AMA seems to be an acceptable one and sufficiently flexible.

"The administration of any program should be a function of a committee of ArMA but should involve, does already, the Regional Medical Program and should also involve membership from the medical school. The Physician's Merit Award of the AMA should be adopted as the standard and the achieving of this award should fulfill all requirements for continued certification by the society. The Continuing Education committee should work out an arrangement with the American Medical Association to be a certifying agency for acceptable postgraduate programs for the fulfillment of the required hours of the award. Publicity would then be given to all the hospitals and other agencies throughout the state who might be putting on such programs to use the ArMA Committee as the clearing house and the approving agency. This would widen the possible acceptable programs for the required hours. If a physician did not wish to go through this route, the same number of hours would be acceptable on a state level with perhaps a reduction to a minimum of the required hours and the remainder being elective. These elective hours could come from a wide spectrum of educational experiences and could even include the Dial-A-Tape of the RMP. It is probable that a record is already being kept of those using this service and a certain amount of the use of the service could be credited as elective hours, at least at the state level. Again it would be the function of the Committee to serve as the clearing house for the various hospital staff programs and other programs that are carried out on a continuing basis and which could be used as the elective hours.

"With sufficient imagination used in this approach, there should be no reason why the physician in even the remotest part of Arizona could not participate and fulfill the requirements. As was already discussed and emphasized by Ed Sattenspiel, the Committee should make it its duty to see that the State Medical Meeting was an approved postgraduate course since it fulfills this format and to see that as many others as would fulfill the criteria to be registered with the AMA.

"I believe such a plan might also be of aid to AMA as a pilot project of a state acting as a certifying agent for postgraduate programs acceptable as required hours.

"I will look forward to our next meeting and hope that we can continue to make progress in concrete proposals now that our directions seems to be becoming clear."

Dr. Stark submitted three alternate proposals for consideration. The first two proposals are similar in that the Arizona Medical Association would become an Accreditation Agency recognized by the AMA and would be supported by the AMA in the accreditation process, i.e., accrediting societies, institutions, etc., which produce programs in continuing medical education in Arizona. One of these proposals accepts the required credits of the AMA's Physician Recognition Award as the standard for maintenance of membership in the Arizona Medical Association. In the second proposal ArMA develops its own listing of required credits.

It was determined that the third proposal had the greatest merit for Arizona and Dr. Stark would refine his thoughts and present the proposal at the next meeting. This proposal would avoid the accreditation of institutions and have required credits in the following categories:

1. Medical School or Postgraduate Medical School courses.

2. Annual AMA, Specialty Scientific National Assembly and/or Congress Meeting.

3. Annual Regional or State Chapter Scientific Meeting, of Specialty Societies and courses originated and directly presented by said society

4. Publication of an original article (scientific) in state or national journal.

5. Presentation of original scientific paper to medical audiences.

6. Teaching activities.

7. Annual ArMA Meetings.

The Committee agreed that those members who receive certificates in continuing medical education from national professional societies would thereby fulfill ArMA's requirements, e.g., an AAGP member who continued to receive his three year certificate in continuing medical education would be considered as having met ArMA's requirements for the same three year period.

T.V. PROGRAMMING

Dr. Crouch explained that due to exhausting the films available through present sources, he is considering the National Medical Audiovisual Center, Atlanta, Georgia. With this source, however, it is necessary to purchase video tape. The National Medical Audiovisual Center would re-use the same tapes many times over.

IT WAS MOVED AND CARRIED TO PURCHASE SIX THIRTY-FOUR MINUTE TAPES WITHIN THE T.V. PROGRAM BUDGET IN ORDER TO PROVIDE NEW PROGRAMS.

The subject of having the T.V. programs published in the various T.V. Guides was discussed. It was determined that the attitude of the T.V. stations should be considered prior to publication.

Meeting adjourned 8:25 p.m.

Respectfully submitted,
Edward Sattenspiel, M.D.
Secretary

AD HOC COMMITTEE ON CONTINUING MEDICAL EDUCATION

The meeting of the Ad Hoc Committee on Continuing Medical Education of the Arizona Medical Association, Inc., held Tuesday, December 15, 1970 convened at 7:58 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

ROLL CALL

PRESENT: Drs. Cohen, Melvin L.; Crouch, Boyden L.; Melick, Dermont W.; Stark, Robert E. T., Chairman; Wagner, Albert G.

STAFF: Mr. Barnett, Gary L., Associate Executive Director.

ABSENT: Drs. Crosby, David J.; Jennett, Raymond J.

MINUTES

The minutes of the meeting held November 24, 1970 were approved as distributed.

REVIEW

The committee reviewed the invitation by letter of November 17, 1970 from Colorado/Wyoming Regional Medical Program to participate in their published Continuing Education Calendar for Health Professionals. It was determined to advise them of our present status of involvement in continuing education endeavors.

PROPOSAL

Dr. Stark submitted a proposal of "Continuing Medical Education Requirements" as discussed during the previous meeting as follows:

"CONTINUING MEDICAL EDUCATION
REQUIREMENTS
ARIZONA MEDICAL ASSOCIATION"

"Each Arizona Medical Association Member must complete **150** hours of continuing medical education earned over a continuous three year period.

"At least 60 of those hours must be obtained from any combination of **Required Education** categories as follows:—

Category 1. Internship-Residency (or Fellowship)

Category 2. Education for an Advanced Degree

Category 3. Research in lieu of Training

Category 4. Continuing Medical Education

(a) Courses produced by AMA accredited institutions and until all institutions have had an opportunity to become accredited, courses offered by an organization or institution listed as a course-sponsor or co-sponsor in "Continuing Education Courses for Physicians" of AMA.

(b) Medical School or postgraduate medical school courses.

(c) Annual AMA and ArMA Scientific Medical Meetings. Only attendance at scientific sessions is creditable.

(d) National, Regional, and State Scientific Medical Meetings of Specialty Societies and courses originated and directly presented by said Societies.

(e) Individual ArMA approved course or meeting. (Must be approved in advance by ArMA Committee on Continuing Education.)

(f) Other ArMA approved Educational Activity (Sabbatical leave, postgraduate traineeships)

Category 5. Teaching

One credit hour for each hour of teaching medical students or physicians. Maximum credit of 30 hours for three year period. An additional 60 credit hours may be claimed as elective hours in Category 10.

Category 6. Papers or Publications

Ten credit hours for publication or presentation of an original scientific paper to a medical audience.

"The remaining 90 hours may be acquired from any combination of **Elective Education** as follows:

Category 7. Scientific Medical Meetings — Local

These would include hospital staff conferences, lectures, seminars, and local professional society meetings. (50 hour credit limit)

Category 8. Other educational activities approved by the ArMA's Committee on Continuing Medical Education upon application to it.

Category 9. Scientific Exhibits

Ten Credit hours for preparation and presentation at medical meeting.

Category 10. Additional Teaching

Sixty Credit hours allowed in this category in addition to 30 Credit hour limit in Category 5."

IT WAS MOVED AND CARRIED TO ACCEPT THE CONTINUING MEDICAL EDUCATION REQUIREMENTS AS SUBMITTED, AND TO RE-DRAFT IN RESOLUTION FORM FOR FURTHER STUDY AT THE NEXT MEETING PRIOR TO SUBMITTING TO THE BOARD OF DIRECTORS AT THEIR MEETING OF JANUARY 31, 1971.

Meeting adjourned 8:37 p.m.

Edward Sattenspiel, M.D.,
Secretary
by: Gary L. Barnett,
Associate Executive Director

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

Meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, Sunday, December 13, 1970, convened at 10:20 a.m., Charles E. Henderson, M.D., Chairman, presiding.

ROLL CALL

PRESENT: Drs. Dysterheft, Arnold H.; Henderson, Charles E., Chairman; Jarrett, Paul B.; Sattenspiel, Edward, Secretary; Yount, Jr., Clarence E.

Staff: Mr. Robinson, Bruce E., Executive Director.

ABSENT: Drs. Grobe, James L., President-Elect; Landeen, Fred H., President; Steen, William B.

MINUTES

Approved the minutes of the meeting held February 7, 1970.

PROPOSED BYLAW CHANGES

Dr. Henderson reviewed the House of Delegates Resolution 10-70 regarding the setting up of an Occupational Health Committee and the Finance Committee's recommendations on establishing bylaws changes for these two committees.

IT WAS MOVED AND CARRIED THAT THE FOLLOWING SEVEN RESOLUTIONS BE SUBMITTED TO THE BOARD OF DIRECTORS FOR THEIR APPROVAL AND SUBSEQUENT SUBMISSION TO THE HOUSE OF DELEGATES IN APRIL, 1971.

A-1-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (c) be added to read:

(C) FINANCE: — THE COMMITTEE SHALL CONSIST OF THE TREASURER AS CHAIRMAN AND AT LEAST THREE MEMBERS. THE COMMITTEE SHALL ACT IN AN ADVISORY CAPACITY IN BUDGETARY AND FINANCIAL MATTERS.

A-2-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing Committees. Section 4 (f) be deleted: [*f*]*Industrial Relations: — This committee shall consist of at least five members, appointed on a geographic basis and with due consideration for the specialities and general practice. The committee shall represent the membership of the Association in all questions and decisions relating to medical relations under workman's compensation.*]

A-3-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (h) Medical Economics: be amended to read:

(h) Medical Economics: — This Committee **shall** consist of A CHAIRMAN AND at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with [*all*] matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlarged as necessary.

The purview of this committee shall include:

(1) Governmental Contracts; EXCEPT THOSE MATTERS DEALING WITH WORKMEN'S COMPENSATION:
(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;
(3) Organized Welfare and Charity Work;
(4) Retirement and Investments, including Group Investments for members.

A-4-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendments

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) be added to read:

(I) OCCUPATIONAL HEALTH: — THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST FIVE MEMBERS APPOINTED ON A GEOGRAPHIC BASIS AND WITH DUE CONSIDERATION FOR THE SPECIALTIES AND GENERAL PRACTICE. THE COMMITTEE SHALL REPRESENT THE ASSOCIATION ON ALL QUESTIONS RELATING TO MEDICAL AND ECONOMIC RELATIONS UNDER WORKMEN'S COMPENSATION.

IT SHALL ALSO CONCERN ITSELF WITH THE MAINTENANCE OF GOOD OCCUPATIONAL HEALTH PRACTICES AND IMPROVEMENT IN INDUSTRIAL SAFETY.

A-5-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) Professional: — be amended to read:

[(*i*)] (J) Professional: — This committee shall consist of a chairman and at least ten members. A chairman shall be appointed annually from among the members who have served for at least three years on the committee.

The committee will be responsible for all professional aspects of medicine, other than the economic and legislative areas, and comprise sections on Aging and General Medicine (cancer, diabetes, arthritis, alcoholism, deafness, visually handicapped, blood

and nursing homes); Allied medical groups (allied and paramedical professions and groups); Athletic medicine; Disaster medicine; DRUG ABUSE; Emergency Care; [*Industrial health (Rehabilitation);*] Medical education (at all levels, and The Arizona College of Medicine); Medicine and religion; Mental health; Perinatal and Maternal mortality; Poison control; Public health (Maternal and child health, water and air pollution, nursing homes and veneral disease); REHABILITATION MEDICINE; Safety and such other sections as may be indicated from time to time. It shall interest itself in medico-legal problems. Further, an advisor to the Woman's Auxiliary of ArMA shall be designated (to be chosen from the same geographic area of the state as the current President of the Woman's Auxiliary).

Each committee member, except the chairman, shall serve as chairman of a section for a particular activity. The chairman may also serve as the chairman of a section. The section chairman shall be appointed by the President of the Association, with advice of the chairman of the Professional Committee.

A-6-71

Subject: Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing Committees. Section 4 (c) (d) (e) (g) (h) (i) (j) (k) (l) paragraph identification titles be amended to read as follows:

[(c)] Governmental Services: —
(D) Governmental Services: —
[*(d)*] Grievance: —
(E) Grievance: —
[*(e)*] History & Obituary: —
(F) History & Obituary: —
[*(j)*] Public Relations: —
(K) Public Relations: —
[*(k)*] Publishing: —
(L) Publishing: —
[*(l)*] Scientific Assembly: —
(M) Scientific Assembly: —

Note: The sole purpose of this Resolution is to bring the listing of Standing Committees into alphabetical order assuming that Resolution A-1-71, A-2-71, A-4-71, and A-5-71 are adopted by the House of Delegates.

A-7-71

Subject: Chapter IV — Officers. Section 7. Treasurer — Amendment

RESOLVED, That Chapter IV — Officers. Section 7. Treasurer be amended to read:

The Treasurer is the chief financial officer of the Association AND CHAIRMAN OF THE FINANCE COMMITTEE. Aside from such specific duties as may be otherwise herein provided, [*he shall aid the Board in the preparation of the annual budget*] HE SHALL PREPARE THE ANNUAL BUDGET WITH THE ASSISTANCE OF THE FINANCE COMMITTEE, receive and hold all funds of the Association, and disperse the same upon proper authorization and approval.

He shall order an annual certified audit of the accounts of the Association by a Certified Public Accountant of good repute, and shall have authority to pay out of the funds of the Association to the Certified Public Accountant for services rendered. This audit shall serve as a basis for an annual report to the Board and to the House of his expenditures and the state of the funds in his hands.

Note: This resolution relates to Resolution A-1-71 and should be acted upon only is A-1-71 is adopted.

Meeting adjourned 11:25 a.m.

Edward Sattenspiel, M.D.
Secretary

HOBBY SHOW COMMITTEE, 1971 STATE MEDICAL CONVENTION

Big things are expected of the Women's Auxiliary Hobby Show at the Arizona State Medical Convention to be held in Phoenix, April 29th through May 3rd, 1971.

For the first time in the show's long history, a special "theme" will be carried out, with a special award going to the exhibit best ebemplifying that theme. The show will feature a "Southwestern" theme, and exhibitors will be urged to submit art of the Southwest.

All Arizona M.D.'s and their wives are being encouraged to show their favorite collections, or exhibitions of skill, in order to make this the finest show ever. Only works not previously shown in this Hobby Show will be eligible for exhibition.

Dozens of ribbons will honor each exhibit class (breakdowns of different classes to be announced at a later date), as well as the Sweepstakes Award, and a brand new Theme Award.

When making original Christmas gifts this year, consider making a duplicate to be shown at the important women's Auxiliary Hobby Show at the State Convention in the Spring. Co-chairmen Rheta Sawrey and Wing Blair are determined to make next year's show a real treat for all.

Of special help to exhibitors will be auxiliary representatives in each county to assist participants in the handling of their show applications and exhibits.

Following is a partial list:

Maricopa County: Mrs. George Scharf, 6301 N. 20th St., Phoenix, Phone: 955-8046.
Yuma County: Mrs. Franklin Johns, 2355 Chico Lane, Yuma, Phone: 783-5077.
Yavapai County: Mrs. Francis Carr, 1244 Overstreet Drive, Prescott.

Future Medical Meetings

7TH ANNUAL ARIZONA CHEST DISEASE SYMPOSIUM

March 19, 20 and 21, 1971

RAMADA INN
TUCSON, ARIZONA

Registration: $25.00 (includes two luncheons)

Mail to: **Arizona Chest Disease Symposium**
P. O. Box 6067
Tucson, Arizona 85716

SYMPOSIUM PARTICIPANTS:

Professor Gareth M. Green, M.D.
Burlington, Vermont

Professor J. M. Bishop, DSc., M.D., FRCP.
Birmingham, England

Professor John B. West, M.D., Ph.D.
San Diego, California

Professor Jordan N. Fink, M.D.
Milwaukee, Wisconsin

THE 24TH NATIONAL CONFERENCE OF RURAL HEALTH

March 25-26, 1971

ATLANTA MARRIOT MOTOR HOTEL
ATLANTA, GEORGIA

No Registration Fee

For information write:
Council on Rural Health
American Medical Association
535 North Dearborn
Chicago, Illinois 60610
Attn: Bond L. Bible, Ph.D.

SECOND SEMI-ANNUAL PEDIATRIC DAY

Sunday, March 21, 1971

Sponsored by
Arizona Regional Medical Program
and
University of Arizona College of Medicine

For further information write or call Director of Conferences and Institutes, University of Arizona, Arizona 85721, Telephone (602) 884-2474.

REFRESHER COURSE IN PSYCHIATRY IN MEDICAL PRACTICE

SPONSORED BY:
USC School of Medicine

SCHEDULED:
7:00 to 9:00 p.m. each Tuesday evening from January 12, 1971 through March 30, 1971 (twelve weeks).

PLACE:
Medical Library of Camelback Hospital
5055 North 34th Street, Phoenix

COST:
$35

APPLICATION FORMS:
May be obtained by writing to:
Division of Post-Graduate Psychiatry
USC School of Medicine
2025 Zonal Avenue
Los Angeles, California 90033
The size of the class will be limited; therefore, it is suggested that applications be made as early as possible.

ACCREDITATION:
AAGP

INSTRUCTORS:
Richard E. H. Duisberg, M.D.
Howard S. Gray, M.D.

FORMAT OF COURSE:
As in previous years, didactic lectures, live interviews and seminar discussions will be used.

TOPICS:
Flexible — will include interviewing techniques, exploration of emotional aspects of general medical cases, dynamic formulations, diagnosis, patient management.

THE TWENTY-THIRD ANNUAL MEETING OF SOUTHWESTERN SURGICAL CONGRESS

April 19 - 22, 1971

CAESARS PALACE
Las Vegas, Nevada

For information write:
The Southwestern Surgical Congress
Central Office
301 Pasteur Building
Oklahoma City, Oklahoma 73103



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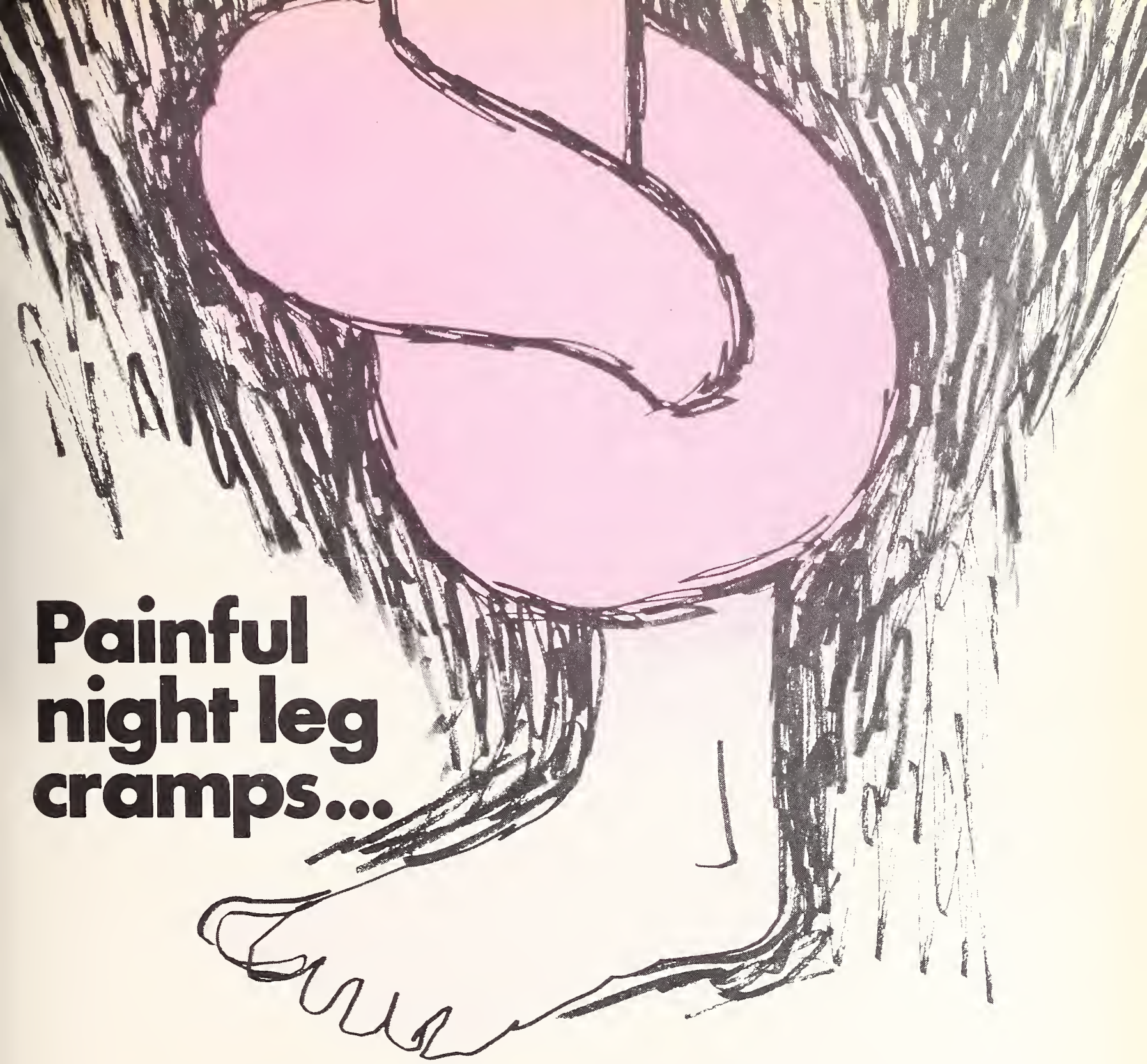
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ECONOMICAL • EFFECTIVE • LONG LASTING PAIN RELIEF
Dosage: 2 tablets followed by 1 or 2 tablets every 8 hours as required, not to exceed 6 tablets in 24 hours. For maximum nighttime pain relief and to help relieve early morning stiffness, 2 tablets at bedtime.
Available: Bottles of 12, 36 and 60 tablets.



Painful night leg cramps...

unwelcome bedfellow for any patient– including those with arthritis, diabetes or PVD

One thing patients can sleep without, particularly patients with chronic disease conditions such as arthritis, diabetes or PVD, is painful night leg cramps. Although seldom the presenting complaint, night leg cramps can tie your patients up in painful knots. Now, just one tablet of QUINAMM at bedtime can usually bring an end to shattered sleep and needless suffering. Your patients will sleep restfully—gratefully—with QUINAMM, specific therapy to prevent painful night leg cramps.

Prescribing Information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions/Adverse Reactions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

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DIVISION OF RICHARDSON-MERRELL INC.
PHILADELPHIA, PENNSYLVANIA 19144

Quinamm™
(quinine sulfate 260 mg., aminophylline 195 mg.)

Specific therapy for night leg cramps

The girth control pill



Tepanil® Ten-tab®

(continuous release form)

(diethylpropion hydrochloride, N.F.)

works on the appetite not on the 'nerves'

When girth gets out of control, TEPANIL can provide sound support for the weight control program you recommend. TEPANIL reduces the appetite—patients enjoy food but eat less. Weight loss is significant—gradual—yet there is a relatively low incidence of CNS stimulation.

Contraindications: Concurrently with MAO inhibitors, in patients hypersensitive to this drug; in emotionally unstable patients susceptible to drug abuse.

Warning: Although generally safer than the amphetamines, use with great caution in patients with severe hypertension or severe cardiovascular disease. Do not use during first trimester of pregnancy unless potential benefits outweigh potential risks.

Adverse Reactions: Rarely severe enough to require discontinuation of therapy, unpleasant symptoms with diethylpropion hydrochloride have been reported to occur in relatively low incidence. As is characteristic of sympathomimetic agents, it may occasionally cause *CNS effects* such as insomnia, nervousness, dizziness, anxiety, and jitteriness. In contrast, CNS depression has been reported. In a few epileptics an increase in convulsive episodes has been reported. Sympathomimetic *cardiovascular effects* reported include ones such as tachycardia, precordial pain, arrhythmia, palpitation, and increased blood pressure. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride; this was an isolated experience, which has not been reported by others. *Allergic phenomena* reported include such conditions as rash, urticaria, ecchymosis, and erythema. *Gastrointestinal effects* such as diarrhea, constipation, nausea, vomiting, and abdominal discomfort have been reported. Specific reports on the hematopoietic system include two each of bone marrow depression, agranulocytosis, and leukopenia. A variety of miscellaneous adverse reactions have been reported by physicians. These include complaints such as dry mouth, headache, dyspnea, menstrual upset, hair loss, muscle pain, decreased libido, dysuria, and polyuria.

Convenience of two dosage forms: TEPANIL Ten-tab tablets: One 75 mg. tablet daily, swallowed whole, in midmorning (10 a.m.); TEPANIL: One 25 mg. tablet three times daily, one hour before meals. If desired, an additional tablet may be given in midevening to overcome night hunger. Use in children under 12 years of age is not recommended.

T-103 / 2/71 / U.S. PATENT NO. 3,001,910

THE NATIONAL DRUG COMPANY
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NEW!

Your Patients May Ask About . . .

HBA'S INCREASED SURGICAL SCHEDULE

During the month of March, 1971 HBA Life is offering their Hospital-Surgical policyowners an opportunity to increase their surgical schedule for an added premium. From the old schedule issued in 1954, the amounts are doubled. This also increases the amount for doctor in-hospital visits from $5 to $10 per visit as well as doubling the anesthetist schedule. On surgical fees, for example, this will bring the Cholecystotomy operation from $225 to $450. It would now bring a Nephrectomy from $300 to $600.

Since the HBA Hospital-Surgical policies are Guaranteed Renewable, the Company can only offer this choice to the policyowner. It is up to them to request the coverage.

TO THOSE NOW ENROLLING

The Hospital-Surgical plan now being issued by the Company has a surgical schedule based on the Relative Value method. At the present time, we are offering the policyowners a choice of either $5.00 per Factor or $7.50 per Factor.

Many HBA policyowners carry a Major Medical Expense Policy to supplement their Hospital-Surgical coverage. In this event, each plan pays independent and in addition to the other plan. The Major Medical Surgical Schedule is based on the Relative Value Factor.

FEE—PATIENT, DOCTOR

HBA does not attempt in any way to set the fee as this is between the patient and the doctor. We are trying to offer a more adequate schedule as this is better for both patient and doctor.

THE HBA LIFE
INSURANCE COMPANY

THE MUSCLE RELAXANT THAT DOES WHAT'S EXPECTED

AND LESS

Some skeletal muscle relaxants cause generalized muscle weakness. Not Norflex. Some require dosages as high as eight tablets a day for effective relief. Norflex relaxes only the muscles in spasm on one tablet b.i.d. Norflex checks pain. Reduces rigidity. Restores mobility. Has less side effects too. So Norflex does what's expected. And does it with less inconvenience.

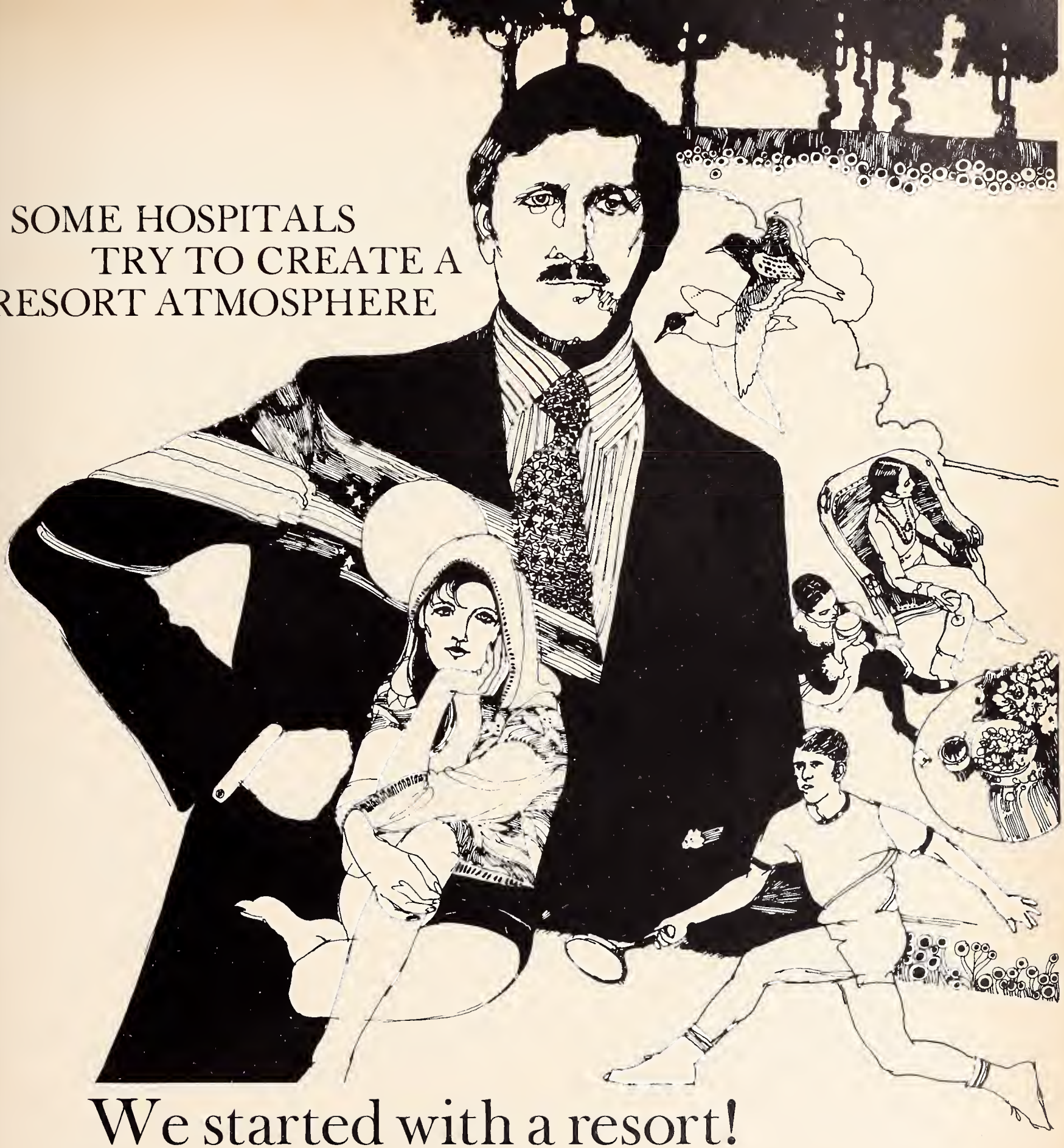
Norflex®
(ORPHENADRINE CITRATE)
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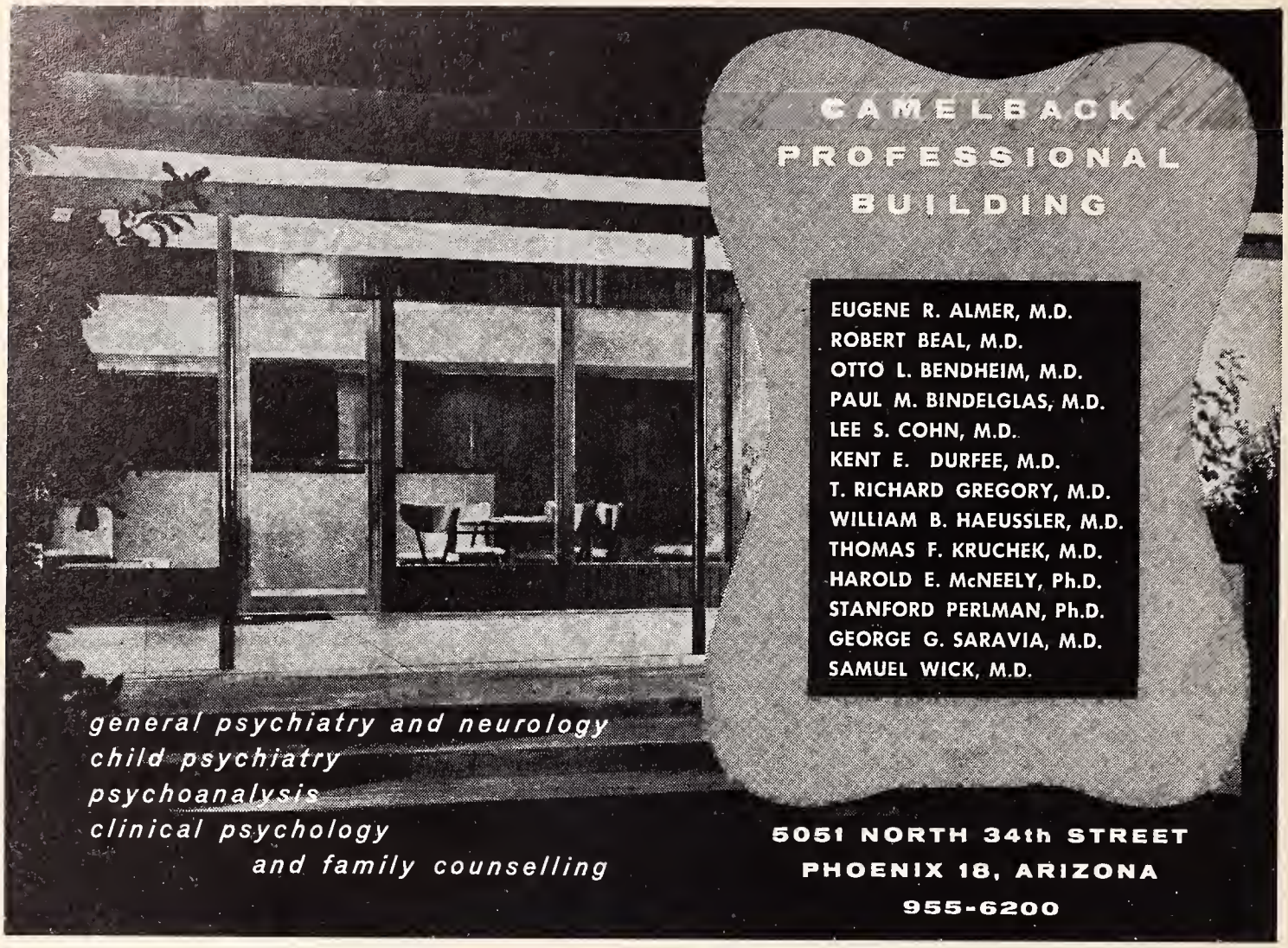
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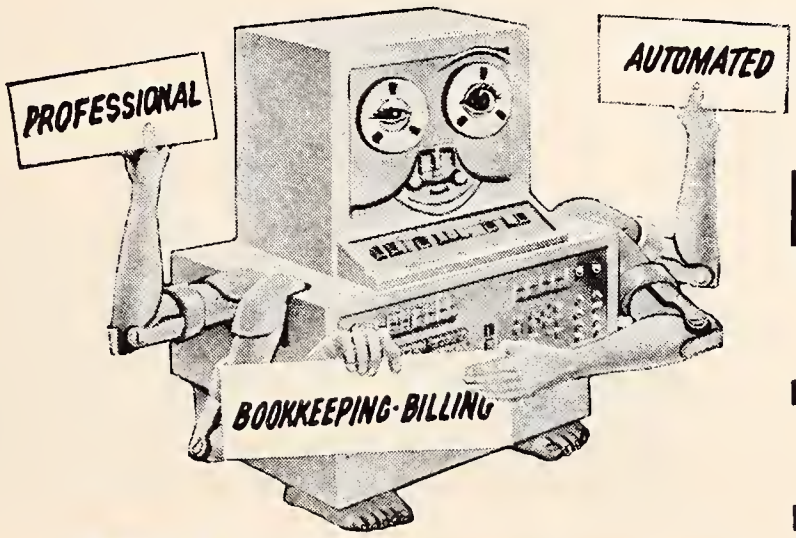
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OUR 80TH ANNUAL MEETING

PLAN TO ATTEND — APRIL 27 - MAY 1, 1971

HERE ARE SOME OF THE FACULTY AND SCIENTIFIC PRESENTATIONS

GUEST ORATORS
From the Faculty of The University of Oklahoma Medical Center

ROBERT M. BIRD, M.D., Dean, School of Medicine & Professor of Medicine & Physiology
Thursday 9:00 a.m. — "Phechromocytoma"
Friday 9:00 a.m. — "Pulmonary Embolism"

WARREN M. CROSBY, M.D., Professor and Vice-Chairman, Department of Gynecology & Obstetrics
Thursday 7:30 a.m. — "Drug Abuse"
Friday 11:00 a.m. — "Population Control"
Friday 2:00 p.m. — "Assessment of Fetal States in Utero"

GORDON H. DECKERT, M.D., Professor and Chairman, Department of Psychiatry and Behavioral Sciences
Thursday 7:30 a.m. — "Drug Abuse"
Friday 11:30 a.m. — "Common Sexual Hang-Ups and the "New" Psychophysiology of Sex
Friday 3:30 p.m. — "The "Heretics" Are Our Own Children"

CLARENCE A. GUENTER, M.D., Associate Professor of Medicine
Friday 2:00 p.m. — "Respiratory Effects of Septic Shock"

DONALD B. HALVERSTANDT, M.D., Associate Professor of Surgery
Thursday 11:00 a.m. — "Management of the Undescended Testis"
Thursday 3:30 p.m. — "Vesicoureteral Reflux and Recurrent Urinary Infection"

JAMES M. HARTSUCK, M.D., Assistant Professor of Surgery
Thursday 11:30 a.m. — "Aspects of Surgical Treatment of Acquired Heart Disease"
Friday 2:30 p.m. — "Treatment of Pulmonary Embolism"

JAMES L. LUKE, M.D., Professor, Department of Forensic Pathology
Thursday 4:00 p.m. — "Dialogues With The Dead"

MR. LLOYD E. RADER — Director of Public Welfare, State of Oklahoma
Friday 7:30 a.m. — "Medicaid"

G. V. ROHRER, M.D., Associate Professor of Medicine and Radiology
Friday 11:00 a.m. — "Granulomatous Disease of the Bowel"
Friday 11:30 a.m. — "Ischemic Colitis"

WILLIAM O. SMITH, M.D., Professor and Vice-Chairman, Department of Medicine
Friday 11:30 a.m. — "Hypo-Natreamia and the Antiduirectic Hormone"
Friday 2:00 p.m. — "Is Magnesium Important in Clinical Medicine?"

JOHN L. TOWNSEND, M.D., Associate Professor Department of Medicine
Friday 11:00 a.m. — "Hypothyroidism"

JAMES E. WENZL, M.D., Assistant Professor of Pediatrics
Thursday 2:30 p.m. — "Management of Childhood Urinary Infections"
Thursday 3:30 p.m. — "Immunosuppressive Therapy of Chronic Renal and Collagen-Vascular Disease in Childhood"

G. RAINEY WILLIAMS, M.D., Professor and Vice-Chairman, Department of Surgery
Thursday 11:00 a.m. — "Surgical Lesions of the Hepatic Ducts"
Thursday 2:30 p.m. — "Surgical Management of Lesions of the Coronary Arteries"

LOCAL GUEST ORATORS

DANIEL B. CARROLL, M.D., (PS) Phoenix, Arizona
Thursday 3:30 p.m. — "Malignant Lentigo — Fact or Fiction?"

WILLIAM J. DUNN, M.D., (IM) Phoenix, Arizona
Thursday 7:30 a.m. — "Drug Abuse"

GORDON A. EWY, M.D., (CD) Tucson, Arizona
Friday 2:30 p.m. — "Comparative Analysis of Defibrillators"

GERALDINE L. FREEMAN, M.D., (PDA) Tucson, Arizona
Thursday 2:00 p.m. — "Long Term Corticosteroid Therapy in Asthmatic Children"

VINCENT A. FULGINITI, M.D., (PD) Tucson, Arizona
Thursday 11:00 a.m. — "The Rubella Virus Vaccine Controversy"

STANLEY J. GOLDBERG, M.D., (PDC) Tucson, Arizona
Thursday 11:30 a.m. — "Exercise Evaluation of Normal Children with Cardiac Disorders"

STANFORD M. GOLDMAN, M.D., (R) Phoenix, Arizona
Thursday 11:30 a.m. — "Roentgen Manifestations of Disease in the Indians of the Southwest"

VERNON F. LOVETT, M.D., (GS) Tucson, Arizona
Thursday 2:00 p.m. — "Peripheral Vascular Surgery: Signs, Symptoms and Indications for Treatment"

RICHARD C. MILLER, M.D., (D-IM) Tucson, Arizona
Friday 2:30 p.m. — "Vulvovaginal Candidiasis"

JOHN PALMER, M.D., Tucson, Arizona
Thursday 7:30 a.m. — "Drug Abuse"

S. W. SHEN, M.D., Tucson, Arizona
Thursday 2:00 p.m. — "Treatment of Homozygous Type II Hyperlipoproteinemia"

THOMAS L. SLOVIS, M.D., Tucson, Arizona
Thursday 2:30 p.m. — "Physostigmine Therapy in Acute Tricyclic Antidepressant Poisoning"

JOSEPH C. WHITE, JR., M.D., (N) Phoenix, Arizona
Thursday 7:30 a.m. — "Drug Abuse"

WAYNE F. WINN, M.D., (P) Phoenix, Arizona
Thursday 7:30 a.m. — "Drug Abuse"

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Precautions: In elderly and debili-ted, limit dosage to smallest effective nount to preclude development of axia, oversedation or confusion (not ore than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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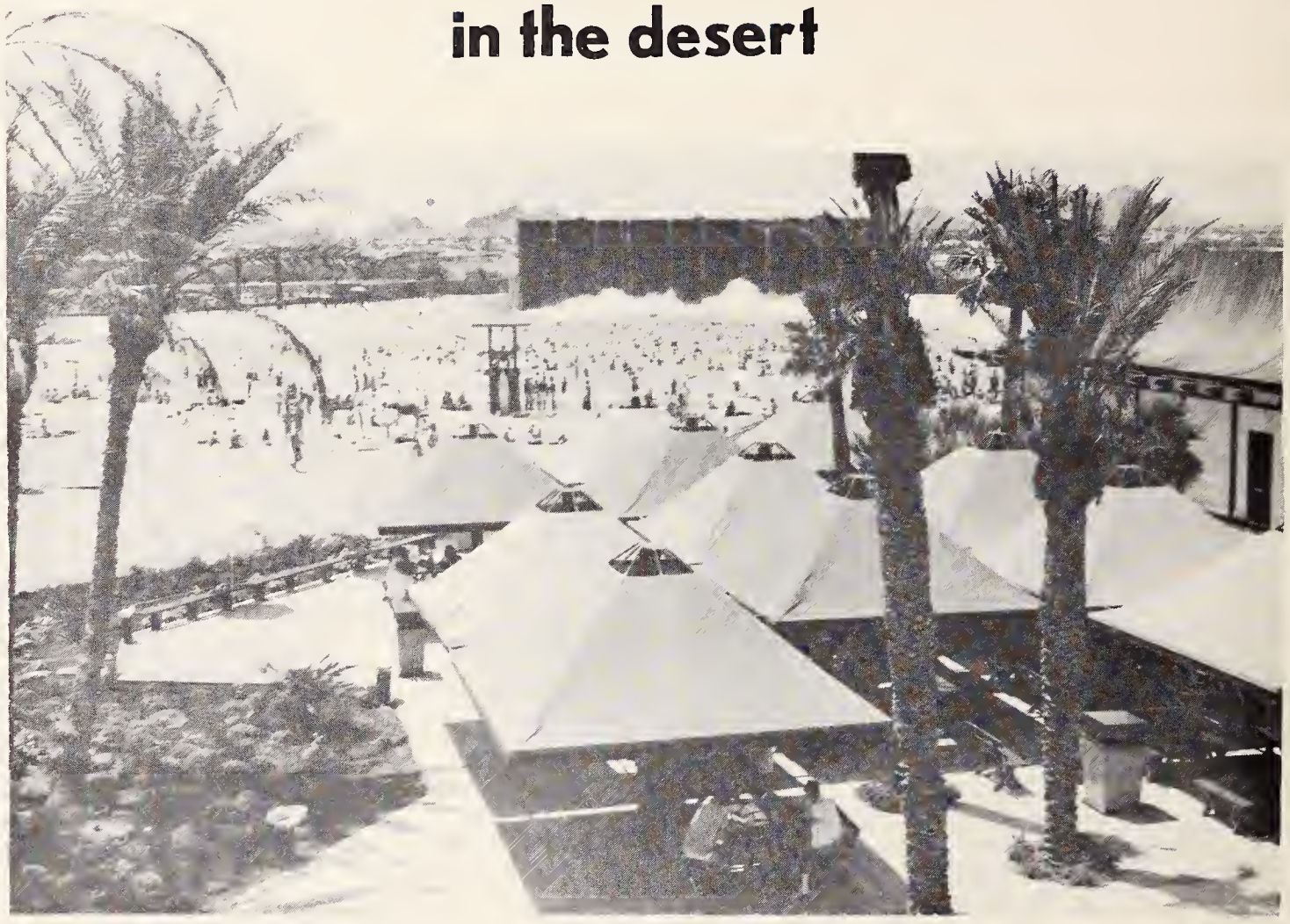
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MARCH, 1971/VOL. 28, NO. 3

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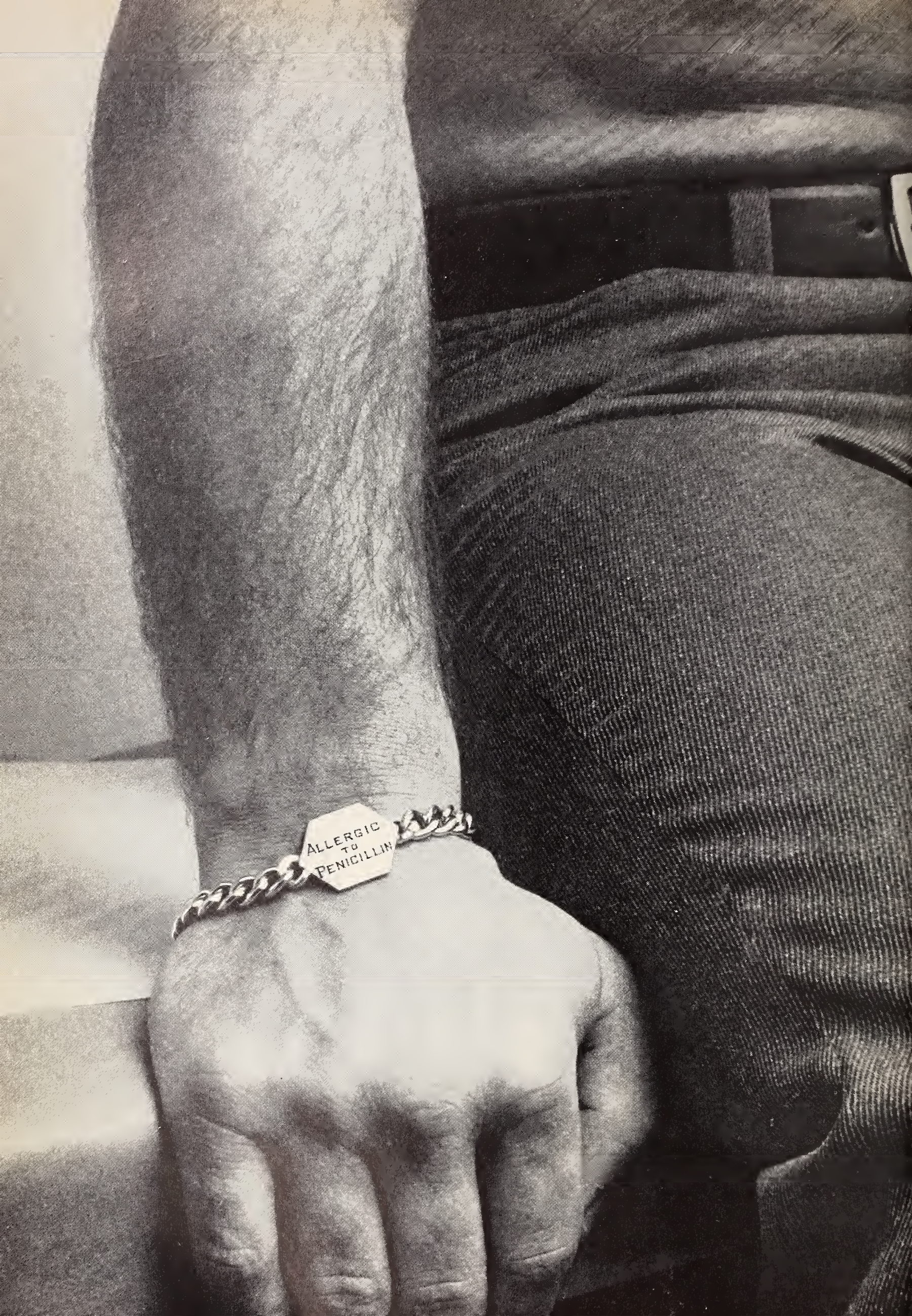
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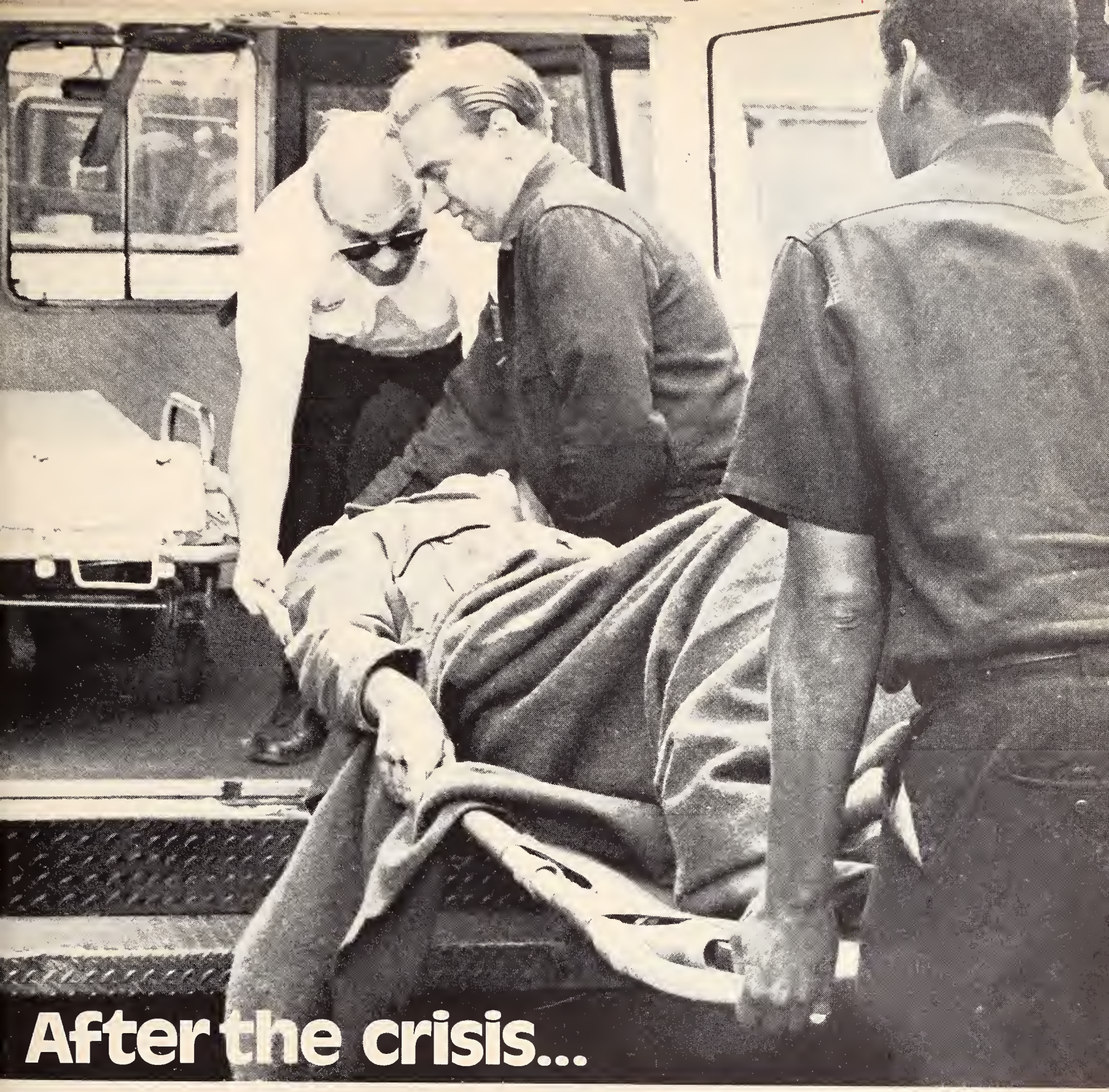
II. PARENTERAL: Intravenous administration may be continuous or intermittent (6 to 8 hour intervals); 1 to 4 Gm. daily in adults; 15 to 25 mg./lb./day in children, depending upon severity of infection. Recommended I.M. dose is 100 mg. (2 ml.) for adults, 50 mg. (1 ml.) for children 30 lbs. or more and 1.4 to 1.8 mg./lb. in smaller children. Injections are usually given at 6 to 8 hour intervals; may be given at 4 to 6 hour intervals for severe infections.

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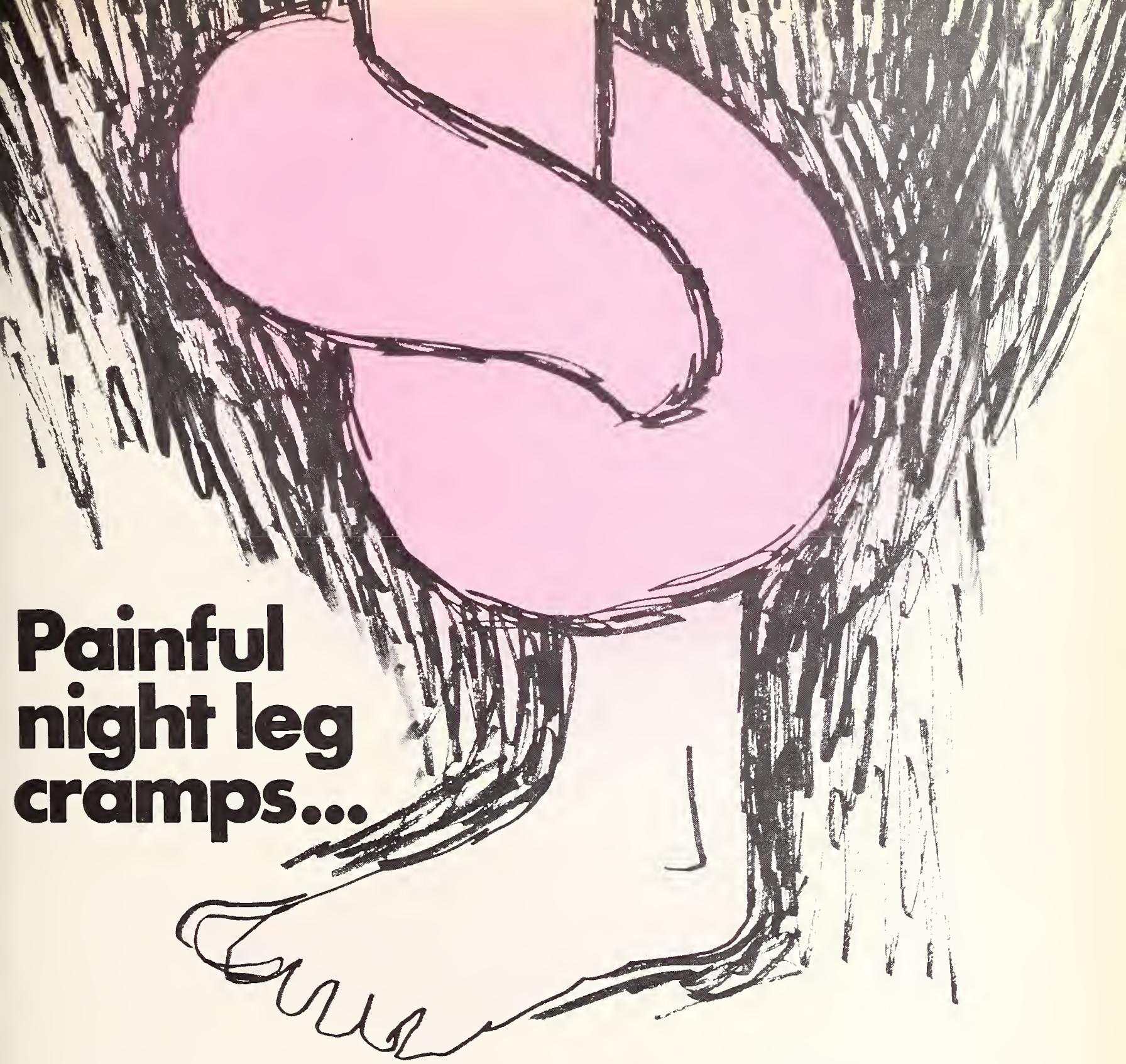
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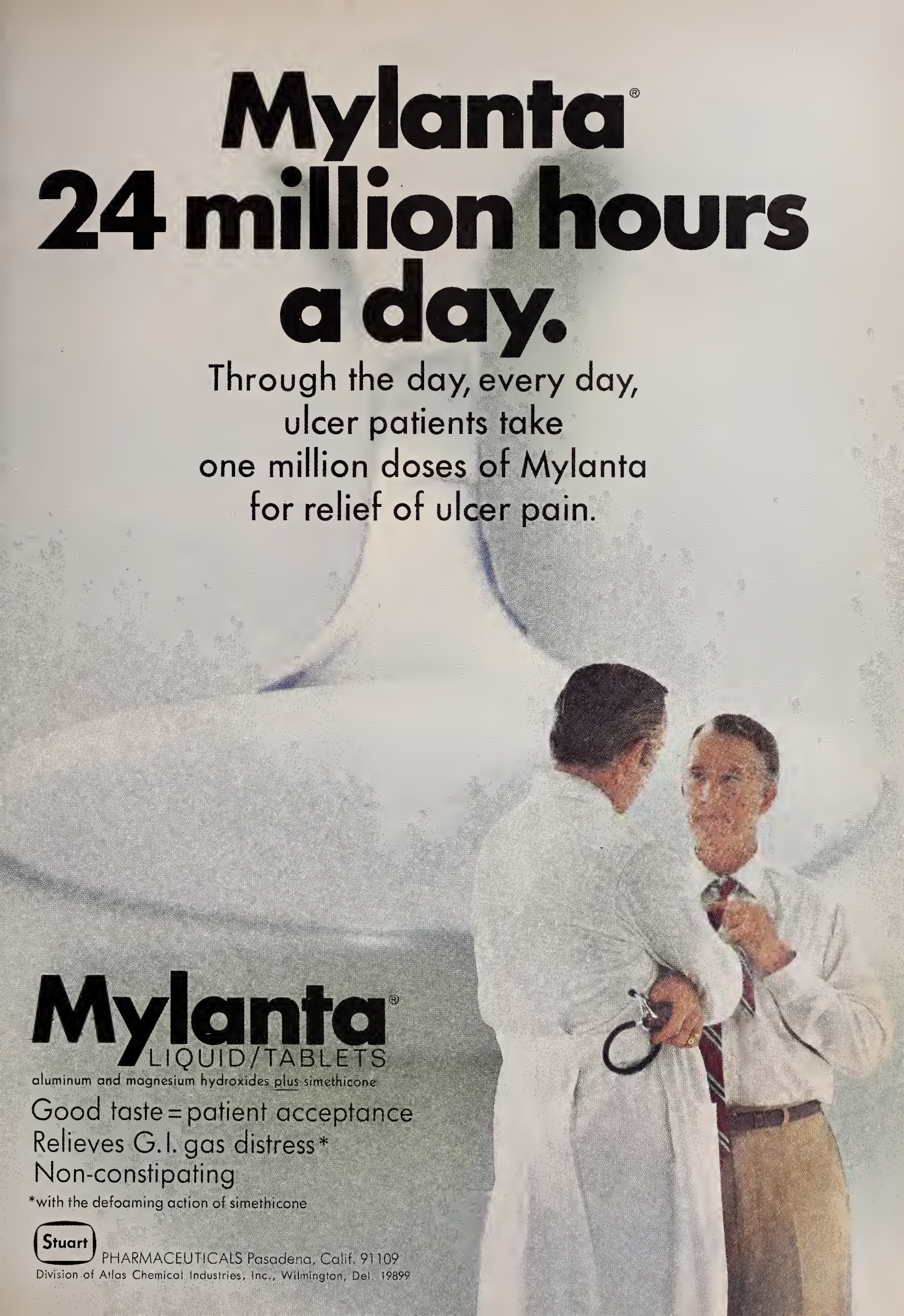
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Before treatment with 5% 5-FU cream. Patient R. G., 78 years old, shows extensive skin changes due to weathering and severe solar/actinic keratoses.

3/26/68
Following one month of therapy. Intense erythematous reaction is seen at sites of keratoses. Normal skin has not reacted. Some areas which had reacted initially have undergone healing despite continued topical application of 5% 5-FU.

6/11/68
Ten weeks after discontinuance of therapy. All areas have healed complete Residual mild erythema remains in son areas. This patient also had seborrheic keratoses which, as expected, have not reacted. There is no evidence of residua lesions or recurrences.



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l alternative conventional therapy

Efudex (fluorouracil) offers the physician a l alternative to cryosurgery, electrodesiccation old-knife surgery in the treatment of solar/actinic oses. It is effective, comparatively inexpensive and ially well suited for treatment of these multiple ıs. Important, too, is the highly desirable cosmetic :. Clinical experience demonstrates that treatment Efudex results in an extremely low incidence of ng.*

ghly effective

In clinical trials, depending on the dosage form trength used, complete involution occurred in 88 per cent of lesions following treatment. The f recurrence was low, ranging from 1.7 to 5.6 per ıp to a year after completion of therapy. When esions appeared, repeated courses of Efudex py proved effective.*

edictable rapeutic response

Two to four weeks constitutes a typical course udex therapy. The response is usually characteris- d predictable. After three or four days of treat-, erythema begins to appear in the area of keratoses. is followed by an intense inflammatory response, ıg and occasionally moderate tenderness or pain. ıeight of the inflammatory reaction generally occurs veeks after the start of therapy, and then begins ɔside as treatment is stopped. Within two weeks of ntinuing medication, the inflammation is usually . A mild erythema may remain for two or three hs before gradually receding. Since this response predictable, lesions which do not respond ld be biopsied.

o strengths—two sage forms

Efudex is available as a 2% or 5% solution or % cream. It is applied twice daily by the patient a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, two im- nt considerations: First, please consult the com- prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

on file, Hoffmann - La Roche Inc., Nutley, New Jersey.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

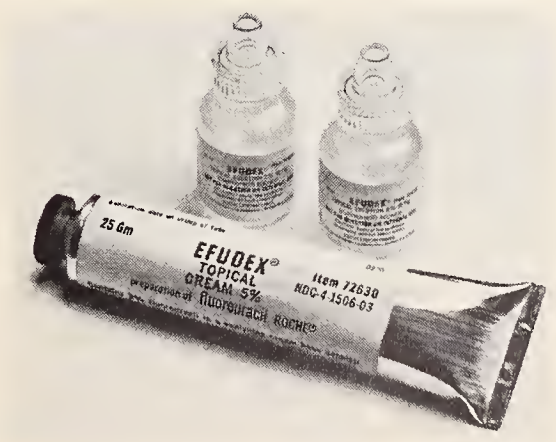
Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)-aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing-cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).



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Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.

Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.

Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.



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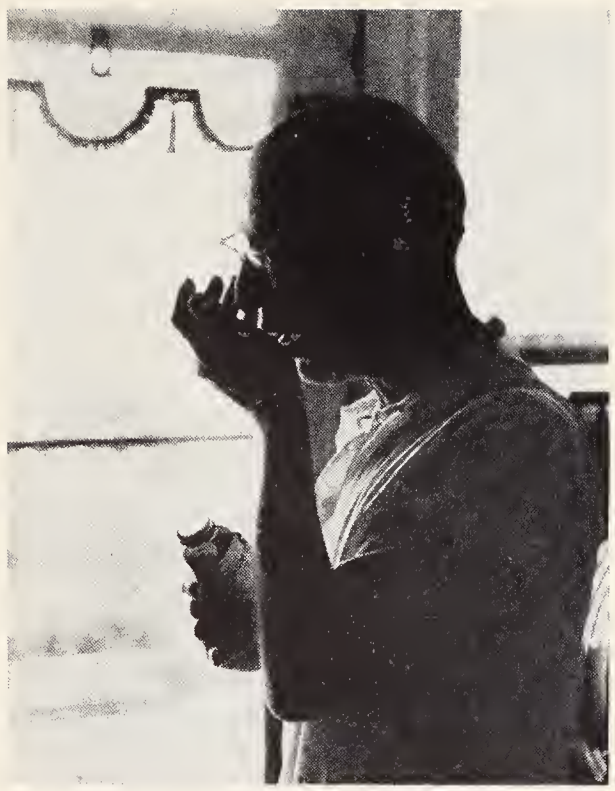
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Dosage: Two tablets per day for adults, regardless of weight or sex; one in the morning and one in the evening.
Contraindications: Contraindications for Norflex are due to the anticholinergic action of orphenadrine. Norflex should not be used in patients with glaucoma, pyloric or duodenal obstruction, stenosing peptic ulcers, prostatic hypertrophy or obstruction at the bladder neck, cardiospasm (megaesophagus) and myasthenia gravis. It should be used with caution in patients with tachycardia.
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Cyanocobalamin (vitamin B_{12})	5 mcg
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Description: For prophylactic or therapeutic nutritional supplementation concomitant with levodopa therapy in patients with Parkinson's disease and syndrome, Larobec provides high potency dosages of the major B-complex vitamins, without pyridoxine (vitamin B_6) which has been reported[1,2] to reduce the clinical benefits of levodopa therapy. B-complex vitamins are essential in the anabolism of carbohydrate and protein and in hematopoiesis. Larobec also contains therapeutic quantities of ascorbic acid, a substance involved in intracellular reactions such as tissue repair and collagen formation.
Indications: Larobec is indicated for supportive nutritional supplementation when a water-soluble vitamin formula (without pyridoxine) is required prophylactically or therapeutically in patients under treatment with levodopa.
Warning: Administration of vitamin B_6 may be required if signs of pyridoxine deficiency develop. Larobec is not intended for treatment of pernicious anemia or other primary or secondary anemias. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with pernicious anemia who receive more than 0.1 mg of folic acid per day and who are inadequately treated with vitamin B_{12}.
Dosage and Administration: One or two tablets daily, as indicated by clinical need.
How Supplied: Orange-colored, capsule-shaped tablets, imprinted Roche 73; bottles of 100.
References:
1. Duvoisin, R. C., *et al.*: *Trans. Amer. Neurol. Assoc., 94*:81, 1969. 2. Cotzias, G. C.: *J.A.M.A., 210*:1255, 1969.

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Indications: SYNTHROID (sodium levothyroxine) is specific replacement therapy for diminished or absent thyroid function resulting from primary or secondary atrophy of the gland, congenital defect, surgery, excessive radiation, or antithyroid drugs. Indications for SYNTHROID (sodium levothyroxine) Tablets include myxedema, hypothyroidism without myxedema, hypothyroidism in pregnancy, pediatric and geriatric hypothyroidism, hypopituitary hypothyroidism, simple (nontoxic) goiter, and reproductive disorders associated with hypothyroidism. SYNTHROID (sodium levothyroxine) Injection is indicated in myxedematous coma and other thyroid dysfunctions where rapid replacement of the hormone is required. When a patient does not respond to oral therapy, SYNTHROID (sodium levothyroxine) injection may be administered intravenously to avoid any question of poor absorption by either the oral or the intramuscular route.
Precautions: As with other thyroid preparations, an overdosage may cause diarrhea or cramps, nervousness, tremors, tachycardia, vomiting and continued weight loss. These effects may begin after four or five days or may not become apparent for one to three weeks. Patients receiving the drug should be observed closely for signs of thyrotoxicosis. If indications of overdosage appear, discontinue medication for 2-6 days, then resume at a lower dosage level. In patients with diabetes mellitus, careful observations should be made for changes in insulin or other antidiabetic drug dosage requirements. If hypothyroidism is accompanied by adrenal insufficiency, as Addison's Disease (chronic subcortical insufficiency), Simmond's Disease (panhypopituitarism) or Cushing's syndrome (hyperadrenalism), these dysfunctions must be corrected prior to and during SYNTHROID (sodium levothyroxine) administration. The drug should be administered with caution to patients with cardiovascular disease; development of chest pains or other aggravations of cardiovascular disease requires a reduction in dosage.
Contraindications: Thyrotoxicosis, acute myocardial infarction.
Side effects: The effects of SYNTHROID (sodium levothyroxine) therapy are slow in being manifested. Side effects, when they do occur, are secondary to increased rates of body metabolism; sweating, heart palpitations with or without pain, leg cramps, and weight loss. Diarrhea, vomiting, and nervousness have also been observed. Myxedematous patients with heart disease have died from abrupt increases in dosage of thyroid drugs. Careful observation of the patient during the beginning of any thyroid therapy will alert the physician to any untoward effects.

In most cases with side effects, a reduction of dosage followed by a more gradual adjustment upward will result in a more accurate indication of the patient's dosage requirements without the appearance of side effects.
Dosage and Administration: The activity of a 0.1 mg. SYNTHROID (sodium levothyroxine) TABLET is equivalent to approximately one grain thyroid, U.S.P. Administer SYNTHROID tablets as a single daily dose, preferably after breakfast. In hypothyroidism without myxedema, the usual initial adult dose is 0.1 mg. daily, and may be increased by 0.1 mg. every 30 days until proper metabolic balance is attained. Clinical evaluation should be made monthly and PBI measurements about every 90 days. Final maintenance dosage will usually range from 0.2-0.4 mg. daily. In adult myxedema, starting dose should be 0.025 mg. daily. The dose may be increased to 0.05 mg. after two weeks and to 0.1 mg. at the end of a second two weeks. The daily dose may be further increased at two-month intervals by 0.1 mg. until the optimum maintenance dose is reached (0.1-1.0 mg. daily).
Supplied: Tablets: 0.025 mg., 0.05 mg., 0.1 mg., 0.15 mg., 0.2 mg., 0.3 mg., 0.5 mg., scored and color-coded, in bottles of 100 and 500. Injection: 500 mcg. lyophilized active ingredient and 10 mg. of Mannitol, N.F., in 10 ml. single-dose vial, with 5 ml. vial of Sodium Chloride Injection, U.S.P., as a diluent. SYNTHROID (sodium levothyroxine) INJECTION may be administered intravenously utilizing 200-400 mcg. of a solution containing 100 mcg. per ml. If significant improvement is not shown the following day, a repeat injection of 100-200 mcg. may be given.

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4 SYNTHROID® INJECTION FOR THYROID EMERGENCIES: Whenever (as in myxedema coma) rapid replacement of thyroid hormone is needed to sustain life, prompt clinical response is essential. SYNTHROID INJECTION makes this therapy instantly available. Useful also in postoperative thyroid medication situations until oral therapy can be reinstated. Ask your Flint man for further information.



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Contraindications: Sensitivity to either component. ***Warnings:*** *Usage in Pregnancy*—Use in woman of child-bearing potential only when potential benefits outweigh possible risks. ***Precautions:*** Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. ***Adverse Reactions:*** Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, *Paraflex* (chlorzoxazone) may possibly have been associated with gastrointestinal bleeding. While *Paraflex* (chlorzoxazone) and chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Usual Adult Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL" —bottles of 100.

References: **1.** Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970. **3.** Vickers, F. N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C. H., Jr., and Britten, A. F. H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Kestler, O. C., and Gyurik, J.: Industr. Med. Surg. *21*:372, 1962. **6.** Forster, S., et al.: Amer. J. Orthop. *2*:285, 1960. **7.** Data on file, McNeil Laboratories, Inc. **8.** Friend, D. G.: Clin. Pharmacol. Ther. *5*:871, 1964.

*U.S. PATENT NO. 2,695,877

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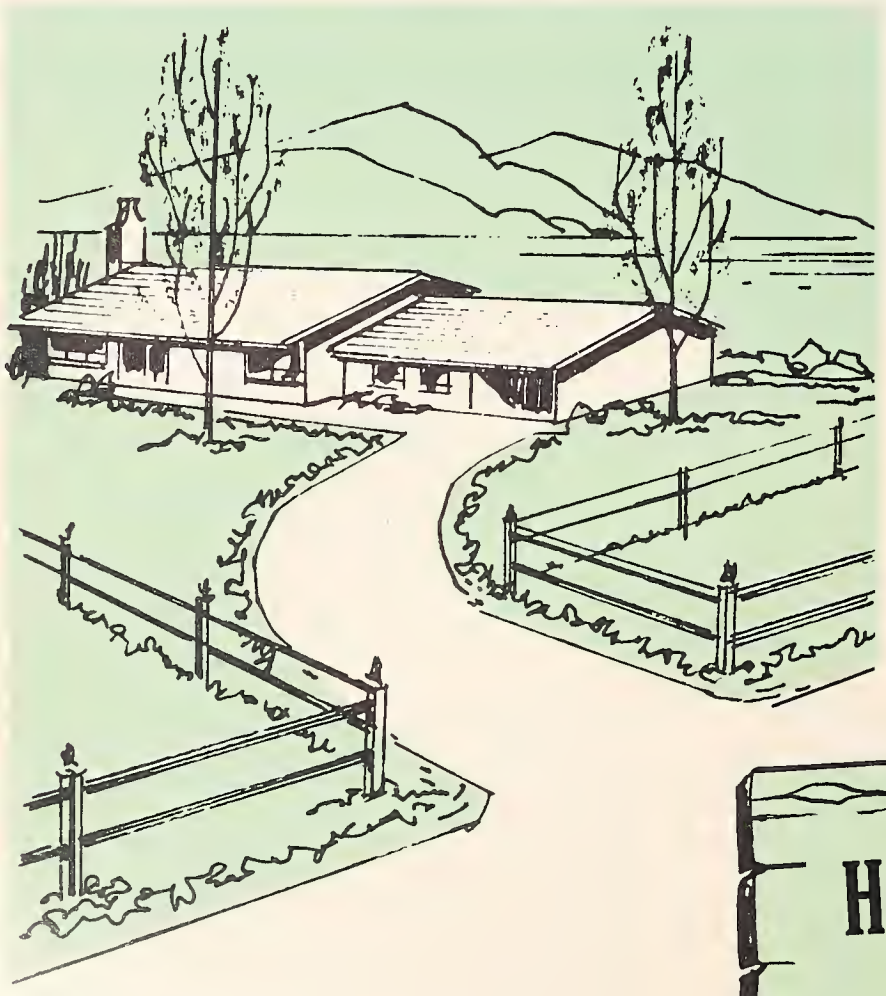
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Original Articles



Paul W. Nykamp, M.D.

VERTEBRA PLANA:

TWO CASES DUE TO DISSEMINATED COCCIDIOIDOMYCOSIS

In 1925 Calvé reported a localized affection of the spine, suggesting osteochondritis, which later became known as vertebra plana.[1] He believed that it was of the same etiology as coxa plana. Since that time vertebra plana has come to refer to a roentgen syndrome characterized by a flat vertebra with no narrowing of the disks above and below it and which may be associated with eosinophilic granuloma, Hand-Schuller-Christian Disease, Hodgkin's Disease, osteogenesis imperfecta, hyperparathyroidism, unidentified malignancies, or injury in tetanus.[6, 3] Also tuberculosis, sarcoma, carcinoma, neurofibromatosis, syphilis, trauma, multiple myeloma, osteomyelitis and rickets have been reported in association with vertebra plana.[5] We have not found any reference in the American literature that describes vertebra plana due to coccidioidomycosis. The present report demonstrates vertebra plana in two patients with disseminated coccidioidomycosis.

Among the observations usually reported in vertebra plana, the following were noted in our two patients.

1. Only one vertebra was flattened on initial roetgenograms. In Case 2 there was, in addition, evidence of infection without flattening in the anterior part of the two adjacent vertebrae.

2. Initially, the disk above and below the involved vertebra was intact in both patients. Enlarged disks, which have been reported, were not found.

From the Department of Radiology, Maricopa County General Hospital, Phoenix, Arizona. 85016

3. The involved vertebrae resembled the edge view of a silver dollar and had increased opacity due to relative sparing of the end plates.

4. The posterior elements of the vertebrae were spared.

5. There was no restoration of the vertebral bodies with healing.

6. There was fusiform expansion of the paraspinous shadow in both cases.

CASE REPORTS

Case 1 (W. M.) A six year old negro female was admitted because of gradually increasing pains in back, shoulders and legs for six weeks. An uncle had died three years earlier of disseminated coccidioidomycosis at age 22 years. Physical examination disclosed a spastic paraplegic gait with accentuated upper thoracic kyphosis. There was shotty, generalized lymphadenopathy bilaterally and a small infiltrate in the right lower lung. Thoracic spine x-rays revealed a vertebra plana at T-4 with fusiform bulging of the paraspinous tissues. The disc above and the disc below were intact on initial films. (Fig. 1). The white blood count was elevated with normal differential count. The hemaglobin was 10.3 gm. %. Sickle cell preparation was negative. Serum complement fixation for coccidioidomycosis was positive to a titre of 1:512. Precipitins were initially positive. The skin test for coccidioidomycosis had converted from negative to positive at the time of admission. The cerebro-

spinal fluid on examination two weeks after admission showed eleven cells per cubic mm, five of which were mononuclear. Complement fixation on spinal fluid was positive for coccidioidomycosis in a dilution of 1:2. The vertebra was not biopsied. The patient was treated with intravenous Amphotericin-B and a body cast and is alive and well except for dorsal kyphosis. Recent radiographs do not show restoration of the vertebral body.

Case 2 (A. M. H.). This eighteen years old negro female was transferred to Crippled Childrens' Hospital in Phoenix with the diagnosis of disseminated coccidioidomycosis. She was a life-

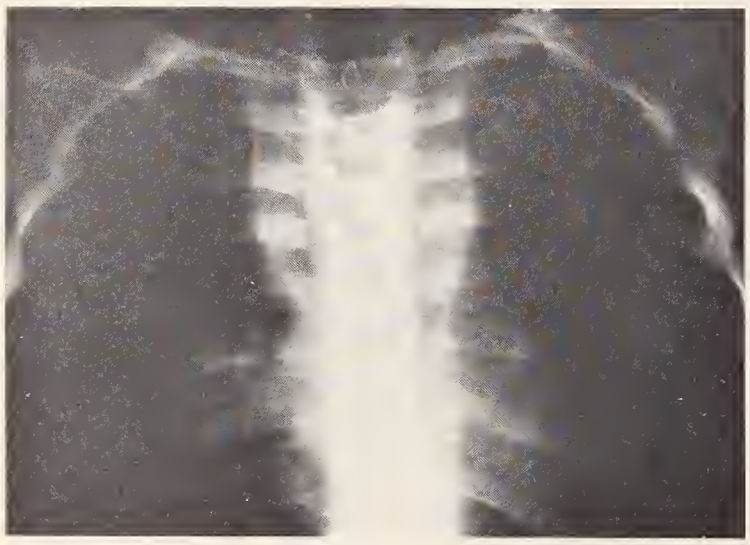


Figure 1A



Figure 1B

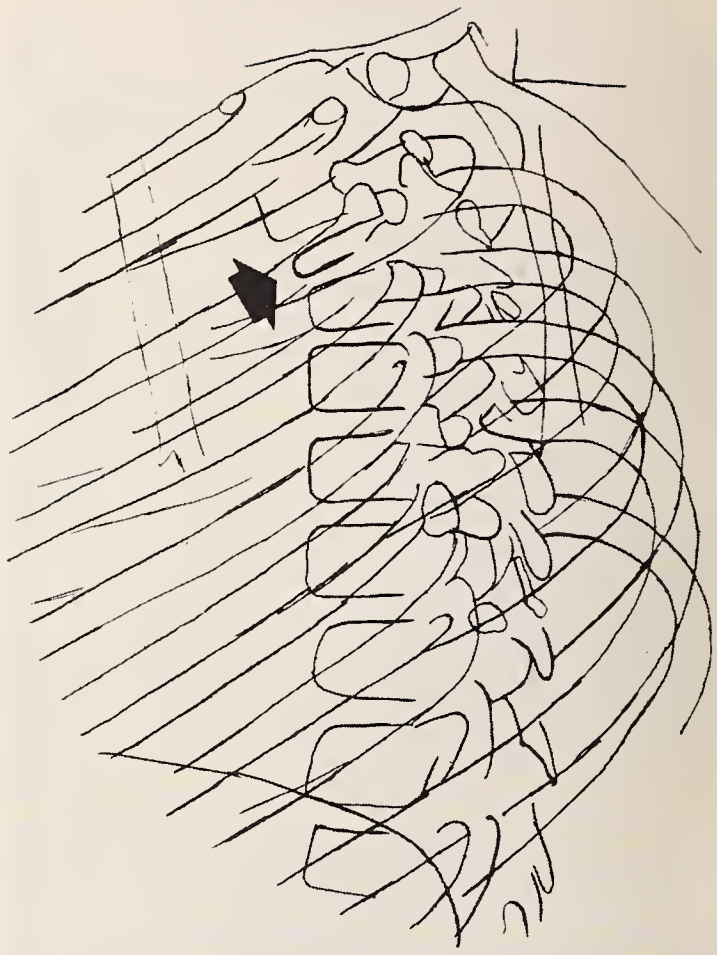


Figure 1C

Figure 1

Case. 1. A and B Anterior-posterior and oblique radiographs of the dorsal spine showing flattening of the T-4 vertebral body and fusiform expansion of the paraspinous shadow.

C. Line drawing of B.

long resident of Arizona, and recently was living in Tucson. She had presented with gradually increasing back pain localized to the mid-dorsal spine. There was a gibbus deformity and limitation of motion and tenderness over the mid-dorsal spine. Neurological examination was normal. The chest x-ray revealed a moderate left pleural effusion. Thoracic spine x-rays revealed a vertebra plana at T-9 with fusiform bulging of the paraspinous tissues. The disk spaces above and below T-9 were intact. There was no increase in height of the disks (Fig. 2). The hemoglobin was 9.5 gm. %. The complement fixation was positive to a dilution of 1:512 and was reported to be 1:64 previously. The precipitins were negative but were reported to have been positive previously. The pleural fluid had a positive complement fixation titre of 1:64. The coccidioidan skin test was positive. The vertebra was not biopsied. The patient was treated with



Figure 2A



Figure 2B

Figure 2

Case 2. A and B Coned down anterior-posterior and lateral radiographs of low dorsal spine show inereased opaeity of the flattened vertebral body of T-9. The disks adjaeent to the flat vertebra are intaet. Films eourtesy of D. H. Welsh, M.D. of Tucson.

intravenous Amphotericin-B and braces. She has recently been readmitted to the hospital because of recurrent pleural effusion. Recent radiographs do not show restoration of the vertebral body.

DISCUSSION

Coccidioidomycosis is an infectious disease caused by the fungus Coccidioides immitis, which is endemic to various areas of the southwestern United States and also other countries. The usual portal of entry is the lower respiratory tract and occasionally it disseminates to bone and other organs. In the absence of a biopsy, the rising complement fixation titres, the initially positive precipitins which reverted to negative, along with the clinical evidence of improvement with treatment with Amphotericin-B, would be considered proof of disseminated coccidioidomycosis of bone. Osseous involvement is usually pridomycosis of bones and also wrote in regard to the spine, "Vertebrae are attacked indiscriminately in bodies, neutral (sic) arches, transverse and spinous processes. Erosions of the anterior margins of vertebral bodies occur, usually involving several. Some have central circumscribed destructions, solitary or multilocular without collapse. The intervertebral cartilage may or may not be affected."[2] Recently, Eller and Siebert have described dense sclerotic vertebra due to coccidioidomycosis.[4]

SUMMARY

Two cases of vertebra plana due to coccidioidomycosis are described. Coccidioidomycosis, not previously reported in the American literature, must therefore be added to the list of causes of vertebra plana.

ACKNOWLEDGMENTS

The author is indebted to D. Matthiesen, M.D. for use of Case 2 and to Marcy L. Sussman, M.D. for advice on preparing this manuscript.

REFERENCES

1. Calvé, J.: A Loealized Affeetion of the Spine Suggesting Osteoehondritis of the Vertebral Body with the Clinieal Aspeet of Pott's Disease: J. Bone & Joint Surgery, 1925, 7:41-46.
2. Carter, R. A.: Infeetious Granuloma of Bones and Joints, with Speeial Referenee to Coeeidioidal Granuloma. Radiology, 1934, 23:1.
3. Compere, E. L., Johnson, W. E. and Coventry, M. B.: Vertebra Plana (Calvé's Disease) Due to Eosinophilie Granuloma. J. Bone & Joint Surgery, 1954, 36-A: 969-980.
4. Eller, J. L. and Siebert, P. E.: Selerotie Vertebral Bodies: An Unusual Manifestation of Disseminated Coeeidioidomycosis. Radiology, 1969, 93:1099-1100.
5. Fényes, I., and Zoltán, L.: Calvé's Disease: Does it Exist? British J. Radiology, 1959, 32:394-403.
6. Weston, W. J. and Goodson, G. M.: Vertebra Plana (Calvé). J. Bone & Joint Surgery, 1959, 41-B:477-485.

UNCOMMON NEUROLOGIC MANIFESTATIONS OF CARDIAC DISEASE

H. WILLIAM BUCHSBAUM, M.D.
ROBERT A. O'ROURKE, M.D.
LEE I. SCHOCKET, M.D.

The report of cases in support of this title represent interesting examples of neurological complications of heart disease by early diagnosis, sometimes obsure bacteremia may be discovered in time to institute effective therapy. Surgical procedures can aid in treatment. We are also reminded that disease has little regard for specialty lines in medical practice.

The usual neurologic manifestations of cardiac disease can be divided into clinical syndromes that are due to: (1) diminished cardiac output, (2) embolic phenomena or (3) systemic toxicity. The patient with a low cardiac output may present with sudden loss of consciousness, seizures, or even a focal neurologic deficit simulating stroke. Frequently, the patient with an otherwise silent subendocardial or transmural myocardial infarction is admitted to a neurology ward because of the acute onset of hemiplegia due to cerebral embolism. Patients with atrial arrhythmias, particularly atrial fibrillation, often present because of the acute onset of focal neurologic findings due to cerebral embolization. Patients with cardiac disease are frequently seen in neurologic consultation because of diffuse or focal neurologic symptoms which result from systemic toxicity. This may be due to electrolyte abnormalities or azotemia which result from either poor renal perfusion secondary to low cardiac output or from the chronic use of diuretic therapy. In addition, cardiac drugs such as digitalis, quinidine, or propranolol may cause neurologic symptoms either by de-

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pression of myocardial function and reduction in cardiac output or by the production of cardiac arrhythmias. Focal neurologic lesions, such as due to a previous cerebral infarction, often become clinically apparent during electrolyte abnormalities, azotemia, fever or the dimished cardiac output accompanying cardiac failure.

The purpose of this communication is to present four patients who presented with uncommon neurologic manifestations of cardiac disease.

Case Reports

Case 1:

A 22 year old Caucasian female, who had been visiting a hospitalized relative, walked into the hospital parking lot where she developed the sudden onset of a left hemiplegia. She was admitted to a general medical service where she was seen in neurologic consultation. Pertinent physical findings at that time included a left hemiplegia, a left homonymous hemianopsia, fever and a Grade II/VI pansystolic murmur which was maximal at the cardiac apex. Initial laboratory data revealed a white blood cell count of 12,500 per mm,^{3} with a normal differential and a hemoglobin of 10.3 gm. Urinalysis, chest x-ray, and electrocardiogram were all within normal limits. The spinal fluid was normal. During the first five days of hospitalization, the hemoglobin decreased to 8.4 gm., and low grade fever persisted. Several blood cultures grew out streptococcus viridans and the patient was started on large doses of daily intravenous penicillin. Blood cultures remained positive for alpha hemolytic streptococcus until the sixth week of intravenous penicillin therapy. The patient was discharged after ten weeks of hospitalization with a diagnosis of cerebral embolism, secondary to bacterial endocarditis and mild mitral regurgitation as a manifestation of rheumatic heart disease.

Comment

A major cerebrovascular accident is an uncommon presentation for a patient with bacterial endocarditis,[1, 2] but it is a frequent and serious complication of the established disease. A clue to the diagnosis of endocarditis in the neurologic patient may be the presence of a heart murmur on physical examination, the presence of anemia on laboratory examination, or the persistence of a low grade fever. Bacterial endocarditis should always be considered in the young patient who presents with the sudden onset of a neurologic deficit, even in the absence of a heart murmur.

Case 2:

A 52 year old Caucasian male with the history of an "innocent" heart murmur since age 20 was admitted to the hospital following the acute onset of headache and subsequent coma. Five years earlier he had been hospitalized with diagnosis of a "brain stem stroke" from which he made total recovery. Seven months prior to this admission, the patient had multiple vague complaints including pains in his right leg. The diagnosis of thrombophlebitis was made and he was placed on oral anticoagulant therapy. During the next few months the patient complained of generalized weakness. At the time of hospital admission the patient was comatose and a lumbar puncture revealed hemorrhagic spinal fluid under high pressure. There was a grade II/VI long systolic murmur heard best at the cardiac apex. After four days of hospitalization, the patient's sensorium improved and he began to speak and move all four extremities. However, during a subsequent six hour period he became more obtunded and a left carotid arteriogram was performed which revealed a subdural hematoma. The subdural hematoma was evacuated but the patient's post operative course was complicated by persistent fever. On the fifth post operative day two blood cultures which had been previously drawn grew out streptococcus viridans. For the next two weeks the patient was treated with large doses of intravenous penicillin and intramuscular streptomycin. The patient's fever improved, his sensorium cleared, and he was ambulatory. Then, suddenly eighteen days after surgery, the patient complained of excruciating headaches and within twenty minutes developed a fixed, dilated right pupil, a left hemiplegia and died. At autopsy (Figure 1) the patient was noted to have both rheumatic mitral and aortic valve disease with organized vegetations on both valves. Post mortem examination also revealed a distal right middle cerebral aneurysm which had ruptured in the subdural space causing an acute subdural hematoma.

Comment

The original subdural hematoma may have been due to the anticoagulation itself, but was more likely due to a small aneurysm, not found on autopsy, which had ruptured. The second aneurysm was definitely mycotic in origin and had clearly ruptured into the subdural space.

Anticoagulants are generally contraindicated in bacterial endocarditis because of the increased danger of bleeding, following embolization.[3, 4]

This case illustrated that patients with bacterial endocarditis may present with an acute subdural hematoma due to rupture of a mycotic aneurysm into the subdural space as well as with the more common neurologic syndromes due to rupture of infected material or blood into the subarachnoid space or into the brain substance itself.[5, 6]



Figure 1:
Case 2. Gross cardiac specimen showing left ventricular hypertrophy fibrosis, left atrial dilitation and vegetations on the mitral valve leaflets and wall at the left atrium.

Case 3:

A 36 year old right handed male was hospitalized in 1966 with a two day history of a severe occipital headache. Eight years prior to admission the patient had had cardiac surgery for severe aortic regurgitation, at which time a Hufnagel prosthetic valve was inserted into the descending aorta. One year after cardiac surgery the patient had been readmitted to the same hospital with the acute onset of occipital headache and blood in the spinal fluid. No angiogram was performed at that time. Because of persistent fever the patient was treated with five million units of penicillin intravenously for three weeks and was discharged from that hospital with the diagnosis of subarachnoid hemorrhage of undetermined etiology. In 1966 the patient presented to an emergency room because of the sudden onset of severe occipital headache accompanied by nuchal rigidity. Physical examination revealed a blood pressure in the right arm of 180 mm Hg systolic and 40 mm Hg diastolic, a heart rate of 60 beats per minute and a respiratory rate of 16 per minute. The patient was afebrile. Examination of the heart revealed left ventricular enlargement, prosthetic valve sounds, a grade III/VI systolic ejection murmur audible over the entire precordium and a grade I/VI diastolic murmur localized to the aortic area. Neurological examination revealed only nuchal rigidity. The rest of the examination was normal. The lumbar puncture showed grossly bloody spinal fluid under high pressure. Bilatera lcarotil arteriograms were done which revealed an 8 to 10 mm aneurysm in the posterior parietal branch of the right middle cerebral artery. (Figure 2). Under hypothemia this aneurysm was ligated but not removed. Subsequent carotid arteriograms showed that the aneurysm no longer filled with contrast material. After surgery, the patient had a brief episode of aphasia and a left hemiparesis which cleared entirely within ten days.



Figure 2:
Case 3. Lateral view of right carotid arteriogram showing aneurysmal dilitation in the posterior parietal branch of the middle cerebral artery.

Comment

The patient's history of recurrent subarachnoid hemorrhage, the three weeks of antibiotic treatment for persistent fever in 1959 and the subsequent angiographic demontration of a distal mid-

dle cerebral aneurysm make it likely that this patient had bacterial endocarditis in 1959 with a mycotic aneurysm that was ligated seven years later following rupture into the subarachnoid space. This diagnosis is even more likely in a patient who has a prosthetic aortic valve, a predisposing site for bacterial endocarditis.

Case 4:

A 31 year old female was hospitalized with a one month history of progressive dyspnea on exertion and with the sudden onset of severe dyspnea at rest followed within minutes by paraplegia. Past medical history and family history were non-contributory. Initial physical examination revealed a heart rate of 150 beats per minute with a regular rhythm, and no heart murmurs. The right femoral pulse was diminished. On neurologic examination there was loss of sensation to pin and touch below T-11 and a flaccid paralysis of the lower extremities. A chest x-ray showed pulmonary edema and an electrocardiogram showed sinus tachycardia. Two days following the onset of paraplegia, there was some return of position sense but no return of pain, touch, temperature, or movements in the legs. She subsequently developed bilaterial extensor plantor responses. The diastolic murmur of mitral stenosis became more apparent as the heart rate slowed on digitalis therapy. Cardiac catheterization showed a 10 mm Hg gradient across the mitral valve. An aortic iliac embolectomy was performed and a large thrombus removed from the aortic bifurcation, the right femoral artery. The patient continued to complain of pain in both her legs which was relieved by bilateral lumbar sympathetic nerve blocks. The patient was scheduled for a lumbar sympathectomy; but prior to the time of anticipated surgery, the patient had a cardiac arrest and died. On post mortem examination there was marked fibrosis of the mitral valve leaflets, a moderate degree of mitral ostium narrowing, and right ventricular hypertrophy. A large mural thrombus at the bifurcation of the aorta extended into the ostium of the right common iliac artery. Pathologic examination of the spinal cord showed an infarction in the distribution of the anterior spinal artery (artery of Adamkiewicz).

Comment

The presentation of an acute anterior spinal artery thrombosis and transverse myelopathy in a patient with cardiac disease suggests the presence of a dissecting aortic aneurysm.[7, 8] However, on rare instances, large emboli lodging in the aortic bifurcation may involve anterior spinal arteries causing the sudden onset of a transverse myelopathy.[9, 10] The patient's disease was diagnosed premortem because of the diminished right arterial pulse and the mitral stenotic murmur which became apparent when the heart rate slowed. An embolectomy was performed to exclude the diagnosis of tumor emboli from a left atrial myxoma, as well as to relieve the lower extremity pain.

Discussion

Syncope, seizures, or even focal neurologic symptoms may occur in the course of such diseases as aortic stenosis, aortic regurgitation, congenital heart disease, primary hypertension and arteriosclerotic heart disease. In these disease states, a sudden fall in the peripheral vascular resistance may be unattended by an increase in cardiac output. This results in a subsequent fall in arterial pressure and diminished cerebral perfusion. The fall in peripheral vascular resistance which initiates neurologic symptoms in these patients usually occurs during exercise

A dramatic form of low cardiac output syncope is that associated with mechanical obstruction at the mitral valve orifice which may occur in patients with a ball valve thrombus or a myxomatus tumor of the left atrium.

Another common cause of neurologic symptoms is the Stokes-Adams syndrome which may be defined as transient attacks of cerebral ischemia due to a sudden change in the cardiac rate, rhythm or conduction resulting in a reduced cardiac output.[11] The clinical manifestations of arrhythmia induced syncope may vary from slight faintness or giddiness to loss of consciousness, with or without convulsions. In patients presenting with seizures, an incorrect diagnosis of primary neurologic disease is often made and thus they are first seen on a neurology ward. Electrocardiographic monitoring during a syncopal episode demonstrates the responsible arrhythmia and makes appropriate therapy possible.

The most frequently recognized neurologic manifestation of cardiac disease is cerebral embolization. Arterial embolization can be encountered in any myocardial or valvular disease in which there is a thrombus in the left side of the heart. It is most common when the rhythm is atrial fibrillation. The major types of cardiac dis-

ease associated with the formation of intracardiac thrombi include rheumatic heart disease, arteriosclerotic heart disease, and bacterial endocarditis. Additional cardiac diseases which may be complicated by cerebral emboli include primary myocardial disease, endocardial fibroelastosis, and intracardiac tumors, particularly left atrial myxoma.[13, 14] Recently, there has been an increasing number of cerebral emboli resulting from thrombus formation on prosthetic aortic and mitral valves.

Four patients are presented in this communication who had neurologic signs and symptoms, as the initial manifestation of cardiac disease. Three patients had bacterial endocarditis. The first patient had a cerebral embolism, the second an acute subdural hematoma, and the third had recurrent subarachnoid hemorrhages. These cases demonstrate three different neurologic presentations of bacterial endocarditis.

The first case emphasizes the fact that the diagnosis of bacterial endocarditis should be considered in any young patient presenting with the sudden onset of a neurologic deficit. The presence of a heart murmur, anemia, or persistent low grade fever in a patient with a focal neurological deficit should suggest the diagnosis of bacterial endocarditis in any age group. The second patient with bacterial endocarditis presented with a subdural hematoma. This case demonstrates that mycotic aneurysms may rupture into the subdural space as well as into the subarachnoid space or brain substance. The third patient presented with recurrent subarachnoid hemorrhages due to rupture of a mycotic aneurysm into the subarachnoid space. Septic cerebral aneurysms secondary to endocarditis should always be suspected in a patient with aortic or mitral valve prosthesis who presents with a subarachnoid hemorrhage. This patient's aneurysm was successfully ligated at surgery. Two of these patients had distal middle cerebral artery aneurysms demonstrated angiographically or at post mortem examination. Since congenital aneurysms usually occur near the Circle of Willis, the presence of an aneurysm in the distal portion of the cerebral circulation should suggest the diagnosis of a septic aneurysm, secondary to bacterial endocarditis.

In the absence of bacterial endocarditis, aneurysms in the peripheral distribution of the cerebral arteries should suggest the possibility of tumor emboli originating from the left side of the heart. Recently Burton and Johnson[15] reported a patient with hemiplegia, hemianopsia and dysphagia who was also seen by one of the authors (H. W. B.) Left carotid arteriogram revealed three aneurysmal dilitations in the left middle cerebral artery. The patient died following surgery and post mortem examination revealed a left atrial myxoma and myxomatous tissue in the cerebral aneurysms. More commonly, intracardiac tumors cause neurologic symptoms such as syncope, seizures or coma by ball valve blockade of the mitral orifice. Symptoms frequently occur as the patient changes position. These symptoms are usually intermittent and are due to a transient diminution of cardiac output.

The fourth patient presented with an unusual case of transverse myelopathy. This patient, with mitral stenosis and normal sinus rhythm, developed paraplegia suddenly because of embolization to the aortic bifurcation with involvement of the anterior spinal artery. This diagnosis was suspected clinically because of a diminished right femoral arterial pulse and the murmur of mitral stenosis. A far more common cause of anterior spinal artery occlusion is a dissecting aortic aneurysm.

Indexing Words

aneurysm	**myelopathy**
emboli	**myxoma**
endocarditis	**stroke**

REFERENCES

1. Thompson, J. W. Endocarditis as a cause of cerebrovascular lesions. Brit. Med. J. 2: 1132, 1964.
2. Roach, M. R. and Drake, C. G. Ruptured cerebral aneurysms caused by microorganisms. New Eng. J. Med. 273: 240-244, 1965.
3. Cohen, S. M. Massive cerebral hemorrhage following heparin therapy in subacute bacterial endocarditis: A report of two cases with a review of the literature. J. Mount Sinai Hosp. 16: 214-230, 1969.
4. Barron, K. D. and Fergusson, G. Intracranial hemorrhage as a compilation of anticoagulant therapy. Neurology. 9: 447-455, 1959.
5. Jones, H. R., Jr., Siekert, R. G. and Geraci, J. E. Neurologic manifestations of bacterial endocarditis. Ann. Int. Med. 71: 21-28. 1969.
6. Ziment, I., Nervous system complications in bacterial endocarditis. Amer. J. Med. 47: 593-607, 1969.
7. Moersh, F. P. and Sayre, G. P. Neurologic Manifestations associated with dissecting aneurysm of the aorta. JAMA 144: 1141-1146, 1950.
8. Thompson, G. B. Dissecting aortic aneurysm with infarction of the spinal cord. Brain. 79: 111-118. 1956.
9. Harrington, A. W. Embolism of the spinal cord. Glasglow, Med. J. 103: 28-32. 1925.
10. Kimmelstiel, P. Ueber viridans — escephalitis bei endocarditis lenta Beitr. Path. Anat. 79: 38-68. 1927.
11. Pomerantz, B. and O'Rourke, R. A. The Stokes-Adams syndrome. Amer. J. Med. 46: 941-960, 1969.
12. Corday, E. and Irving, D. W. Effect of cardiac arrhythmias on the cerebral circulation. Amer. J. Cardiol. 6: 803-808, 1960.
13. Maroon, J. C. and Campbell, R. L. Atrial myxoma: A treatable cause of stroke. J. Neurol. Neurosurg. Psychiat. 32: 129-133, 1969.
14. Joynt, R. J., Zimmerman, G. and Khalifeh, R. Cerebral emboli from cardiac tumors. Arch. Neurol. 12: 84-91, 1965.
15. Burton, C. and Johnson, J. Multiple cerebral aneurysms and cardiac myxoma. New Eng. J. Med. 282: 35-36, 1970.



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Because of the leadership of Doctor Fred Landeen, President of the Arizona Medical Association, and the thorough investigation, exhaustive and exhausting discussions of the Committees and Board of Directors of ArMA, this association is now able to provide an exceedingly valuable service to its members in the form of a Professional Liability Insurance program with the Travelers Insurance Company. Travelers has been in business since 1864 and has in excess of six billion dollars in assets. As soon as the majority of the private practitioners in our Association take advantage of this opportunity, they will be assured by Travelers of continuing coverage at reasonable rates, with the usual exceptions.

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Arizona Medicine also calls attention to the President's Page and pages 191, 196, 214 in this issue in which Doctor Fred Landeen elaborates on the same subject.

John R. Green, M.D.

Editor's Page

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President's Page

I approach the end of the year early in this, my last President's Page. It is here you have lived with your thoughts and messages to the membership of ArMA. It is here that reflections occur, and the look to the future is.

As you may all know, I personally took upon myself the problem I felt was our greatest immediate threat, that of malpractice. Throughout the year it began to look as hopeless as a poem I once composed to look at life, at a young and tender age. It went as follows:

"Oh for the folly of it all
and I know not what to do
but to let it lead me where it may
and hope with all hope it treats me fairly"
F.H.L.

As the year progressed and effort after effort failed, the situation became more discouraging. I looked at what appeared to be a major defeat, but then I was reminded of Wendell Phillips thoughts when he said, "What is defeat? Nothing but education, nothing but the first step to something better,"

As you now know this has indeed proven true for we now have the first step to something better. This first step has been taken by your Board of Directors of the Arizona Medical Association. The ability of all of us in ArMA to now walk or run beyond this first step is yours and yours alone. To quote Chamford, "Do not suppose opportunity will knock twice at your door."

This has to be a cooperative effort of the entire, and I repeat entire Arizona Medical Association. This cannot be a segmental approach of the high risk areas of Classics 3, 4, and 5. This is an invitation to all, to be a vital part of this program. This is not a solution to the problem of malpractice, but can be a solution to what were our problems of knowing who our insurance carrier would be, and what the rates are to be. I state this not facetiously but honestly for this program will be based on our experience in Arizona only, and if our experience dictates a decline in rates they will decline. We have a full disclosure program for the Travelers Insurance Company, so we will always know how we, and they are progressing.

I couldn't be happier in this final page as President that I am at this writing. I will tell you, for me, this has been a superb year. The honor you have bestowed upon me in the position of President of the Arizona Medical Association is a cherished one, and one words cannot adequately describe. So all may realize this has only been possible because of all the efforts of Bruce E. Robinson, Gary Barnett, all the girls in the central office, all members of the Board of Directors, the chairmen of all the committees and their untiring members. These people really make this a functioning organization.

In closing, I would tell you, I have faith in the medicine of our country, and in Arizona. We will bend with the changes that are to come, and remember "Faith is the substance of things hoped for, the evidence of things not seen." (Hebrews 11:1)

Fred H. Landeen, M.D.
President

THE LEACOCK APPROACH

Stephen Leacock, quoted in an article by West (Journal of Medical Education; 41:766, 1966), if he were founding a University the sequence in which he would go about it would be first to set up a commons; then, when more funds were available, a dormitory; and after there were some demand for it, a library. Only when the need was more obvious would he hire a professor. One element in Leacock's approach to education that is particularly appealing is the implication that learning is most effective when the learner is a participant.

Some students, (and this can include residents, fellows and practicing physicians) may want an opportunity to participate in the research projects that will be on-going in the departmental research laboratories. The unique and excellent relationships that are developing between the Endocrinology Section and certain of the Basic Medical Sciences arouse a high level of cooperation and productivity in our research efforts.

In the same article by West, it is noted that the development of the capacity for patient-related learning is the most crucial determinant of the future effectiveness of physicians. The mass of current information is so large that only a small portion can be taught. Not all that is taught is learned. A portion of what is taught is now erroneous and much is irrelevant. An even larger portion of what is taught will soon be obsolete. Of that portion which is taught and learned and relevant and correct, much is quickly forgotten. All of this adds up to the fact that the student of the future will need a highly developed capacity for quickly retrieving, organizing and apply pertinent information on a patient's problem.

The Section of Endocrinology of the Department of Internal Medicine, is basing its educational efforts on the assumption that the most relevant educational experience for students, residents, and practicing physicians is carefully supervised work identifying and solving problems of patients for whom they share responsibility with their colleagues.

Dean's Page

Residents, or other physicians rotating through the Endocrine Section, or students taking electives will be the initial personnel responding to consultation requests on the wards and seeing patients in the clinics. They will take the history, perform the examination, formulate the patient's problems, and make tetnative plans for investigation and treatment. The data base and plans will be presented to the staff. The staff will review them, re-examine the patient, and then on the basis of the available information, reformulate the patient's problems and the plans for resolving them.

Students working in clinical correlation sessions with the Endocrine Section, will be given protocols of cases before the sessions and urged to review the pertinent basic science and clinical material. At the sessions the data pertinent to the patient's problem will be displayed in an expanded form using patients, x-rays, and slides. Students will be expected to discuss the problems they have identified and present outlines of their solutions for those problems.

An Endocrine Club made up of university staff and practicing physicians who are interested in the subject has already been started in Tucson. Another is planned in Phoenix. Generally, the speakers are drawn from the membership itself although, on occasion, outside guests are brought in. Half of the time at the meetings is used for questions or discussions.

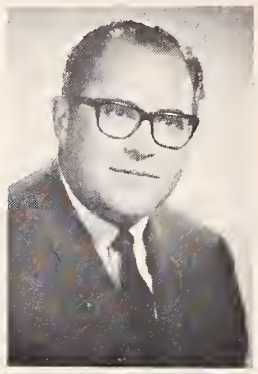
An Endocrine Clinic, and separate, pre-planned Diabetes and Hypertension Clinics, will be started with the opening of the University Hospital in 1971. "Pre-planned" means that the specific sequence of how to identify a patient's problems and how to manage them will be written out as a set of physician's orders including an appendix containing the factual basis leading to the decision-making process used in the work-up. Pre-planned clinic activities will be directed both to working up, and managing, patients using these directions as well as updating the decisions incorporated in the plan.



80th ANNUAL MEETING PROGRAM

ARIZONA MEDICAL ASSOCIATION

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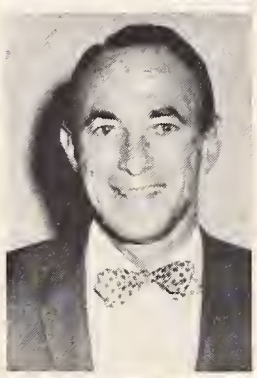
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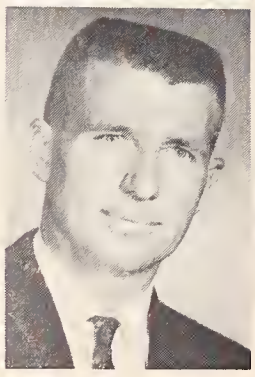
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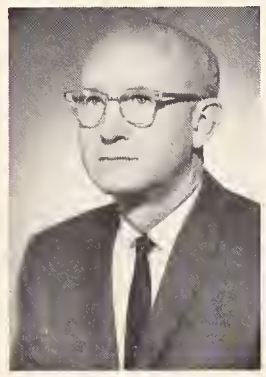


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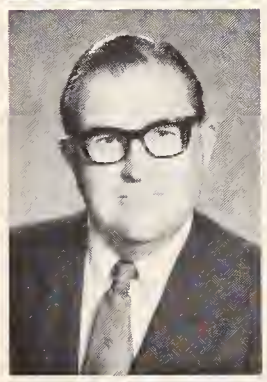
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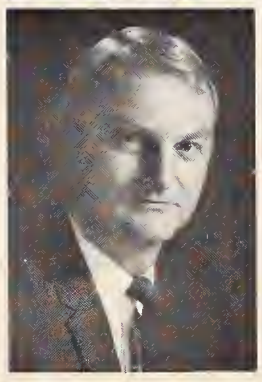
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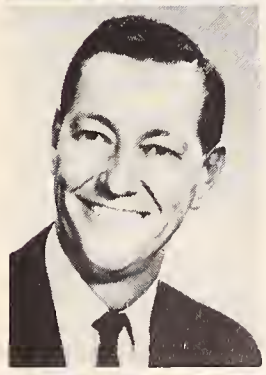
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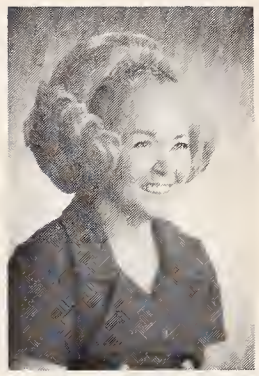
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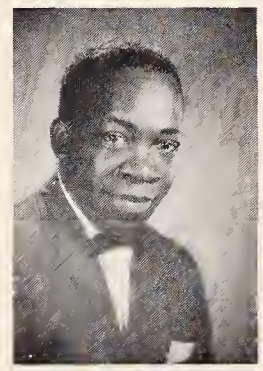
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MRS. CYNTHIA VAN CLEAVE
Stenographer and Receptionist

SCHEDULE OF AFFAIRS

TUESDAY — APRIL 27, 1971

7:00 A.M.—Executive Committee Breakfast Lanai Room

BOARD OF DIRECTORS

9:00 A.M.—Board Meeting Convention Center

12:00 noon—Board Luncheon French Quarter

1:00 P.M.—Exhibit Hall Opens — Visit the Exhibits — Visit the Exhibits —
Registration Badge Required to Attend All Sessions — Uniformed Guard

HOUSE OF DELEGATES

1:00 P.M.-2:00 P.M.—First Session Room A2 Convention Center

2:00 P.M.—General Session Opening Exercises Room A2 Convention Center

Call to Order
Fred H. Landeen, M.D., President

Invocation and Memorial Service
Rev. Culver H. Nelson — Church of the Beatitudes, Phoenix

Welcome
Charles H. Finney, M.D., President
Maricopa County Medical Society

Response
Norman D. Duley, Jr., M.D., President
Coconino County Medical Society

Introduction of Distinguished Guests
Honorable B. L. Tims, Mayor of Scottsdale

Introduction of Incoming President
Fred H. Landeen. M.D.

Presidential Address
James L. Grobe, M.D.

3:00 P.M.—Recess — Visit the Exhibits

3:30 P.M.—Blue Shield Annual Corporate Boby Meeting — First Sesion Room A2 Convention Center

WEDNESDAY — APRIL 28, 1971

REFERENCE COMMITTEE MEETINGS

8:00 A.M.-12:00 noon—ArMA Resolutions Committee Room A2 Convention Center
(To be followed by)
Blue Shield Resolutions Committee Room A2 Convention Center

8:00 A.M.—ArMA Articles & By-Laws Committee Directors Room

12:00 noon—Past Presidents Luncheon French Quarter Room 3

SPORTS COMPETITION

12:00 noon—Annual Golf Tournament Tee-Off Time
Roadrunner Golf Resort — 7331 N. Pima Road, Scottsdale
Green Fee: $8.50 includes one half a golf cart.

1:00 P.M.—Annual Tennis Tournament
Encanto Park — 15th Ave. North of Holly

1:00 P.M.—Bridge, Coffee, etc. Woman's Auxiliary Hospitality Room 150

7:00 P.M.—Annual Reception North Poolside
7 P.M. to 7:30 P.M. — National Calliope Concert, Sponsored by Boyden L. Crouch, MD..

7:30 P.M. to 11:30 P.M. the Desert City Six plus One

8:00 P.M.—Annual Steak Fry North Poolside
(Admission by Ticket Only)
Dress: Western or casual

SCHEDULE OF AFFAIRS

Approved for 12 Hours of Elective Credit by The American Academy of General Practice

THURSDAY — APRIL 29, 1971

7:00 A.M.—Breakfast French Quarter

7:30 A.M.-8:45 A.M.—Panel Discussion French Quarter

Title: Drug Abuse

Discussants: Warren M. Crosby, M.D.; Gordon H. Deckert, M.D.; William J. Dunn, M.D.; John Palmer, M.D.; Wayne F. Winn, M.D.

Moderator: Joseph C. White, Jr., M.D.

9:00 A.M.-10:30 A.M.—SCIENTIFIC SESSION Room A2 Convention Center

Case Presentation: Pheochromocytoma

Participants: University of Oklahoma Faculty — To Be Introduced

Moderator: To be announced

10:30 A.M.-11:00 A.M.—Visit the Exhibits — Visit the Exhibits — Visit the Exhibits
(Coffee served in the Scientific Exhibit Hall)

11:00 A.M.-11:30 A.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: The Rubella Virus Vaccine Controversy

Speaker: Vincent A. Fulginiti, M.D.

Moderator: J. Bruce Tucker, M.D.

SECTION II Room A2 Convention Center

Title: Surgical Lesions of the Hepatic Ducts

Speaker: G. Rainey Williams, M.D.

Moderator: Laurence M. Linkner, M.D.

SECTION III Room A3 Convention Center

Title: Management of the Undescended Testis

Speaker: Donald B. Halverstadt, M.D.

Moderator: Mark M. Kartchner, M.D.

11:30 A.M.-12:00 noon—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Exercise Evaluation of Normal Children with Cardiac Disorders

Speaker: Stanley J. Goldberg, M.D.

Moderator: J. Bruce Tucker, M.D.

SECTION II Room A2 Convention Center

Title: Aspects of Surgical Treatment of Acquired Heart Disease

Speaker: James M. Hartsuck, M.D.

Moderator: Laurence M. Linkner, M.D.

SECTION III Room A3 Convention Center

Title: Roentgen Manifestations of Disease in the Indians of the Southwest

Speaker: Stanford M. Goldman, M.D. — Maurice L. Sievers, M.D.
William K. Carlile, M.D. — Samuel L. Cohen, M.D.

Moderator: Mark M. Kartchner, M.D.

12:00 noon-1:45 P.M.—LUNCHEON RECESS AND SPECIALTY SOCIETY LUNCHEONS

Arizona Chapter of the American College of Surgeons jointly with the Arizona Surgical Association French Quarter Room 1

Western Orthopedics Association French Quarter Room 2

Arizona Society of Pediatrics French Quarter Room 3

SCHEDULE OF AFFAIRS

THURSDAY — APRIL 29, 1971

2:00 P.M.-2:30 P.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Long Term Corticosteriod Therapy in Asthmatic Children

Speaker: Geraldine L. Freeman, M.D.

Moderator: W. Scott Chisholm, M.D.

SECTION II Room A2 Convention Center

Title: Peripheral Vascular Surgery

Speaker: Vernon F. Lovett, M.D. — Mark M. Kartchner, M.D.
Donald D. Ewing, M.D. — Duncan W. Campbell, M.D.

Moderator: Wilfred M. Potter, M.D.

SECTION III Room A3 Convention Center

Title: Treatment of Homozygous Type II Hyperlipoproteinemia

Speaker: S. W. Shen, M.D.

Moderator: Milton S. Dworin, M.D.

2:30 P.M.-3:00 P.M. CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Management of Childhood Urinary Infections

Speaker: James E. Wenzl, M.D.

Moderator: W. Scott Shisholm, M.D.

SECTION II Room A2 Convention Center

Title: Surgical Management of Lesions of the Coronary Arteries

Speaker: G. Rainey Williams, M.D.

Moderator: Wilfred M. Potter, M.D.

SECTION III Room A3 Convention Center

Title: Physostigmine Therapy in Acute Antidepressant Poisoning

Speaker: Thomas L. Slovis, M.D. — John E. Ott, M.D.
Daniel T. Teitelbaum, M.D. — William Lipscomb, M.D.

Moderator: Milton S. Dworin, M.D.

3:00 P.M.-3:30 P.M.—Visit the Exhibits — Visit the Exhibits — Visit the Exhibits
(Coffee served in the Scientific Exhibit Hall)

3:30 P.M.-4:00 P.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Immunosuppressive Therapy of Chronic Renal and Collagen-Vascular Disease in Childhood

Speaker: James E. Wenzl, M.D.

Moderator: W. Scott Chisholm, M.D.

SECTION II Room A2 Convention Center

Title: Malignant Lentigo — Fact or Fiction?

Speaker: Daniel B. Carroll, M.D. — Rex A. Peterson, M.D. — Chusak Banjastitkul

Moderator: Wilfred M. Potter, M.D.

SECTION III Room A3 Convention Center

Title: Vesicoureteral Reflex and Recurrent Urinary Infection

Speaker: Donald B. Halverstadt, M.D.

Moderator: Milton S. Dworin, M.D.

4:00 P.M.-5:00 P.M.—SCIENTIFIC SESSION Room A2 Convention Center

Title: Dialogues With the Dead

Speaker: James L. Luke, M.D.

Moderator: John J. Standifer, M.D.

7:00 P.M.—Arizona Medical Political Action Committee Reception Convention Center

8:00 P.M.—Arizona Medical Political Action Committee Banquet Convention Center

SCHEDULE OF AFFAIRS

FRIDAY — APRIL 30, 1971

7:00 A.M.—Breakfast French Quarter

7:30 A.M.-8:45 A.M.—Presentation and Discussion French Quarter

Title: Medicaid

Speaker: Lloyd E. Rader

Moderator: Wallace A. Reed, M.D.

9:00 A.M.-10:30 A.M.—SCIENTIFIC SESSION Room A3 Convention Center

Case Presentation: Pulmonary Embolism

Participants: University of Oklahoma Faculty — To Be Introduced

Moderator: Robert M. Bird, M.D.

10:30 A.M.-11:00 A.M.—Visit the Exhibits — Visit the Exhibits — Visit the Exhibits
(Coffee served in the Scientific Exhibit Hall)

11:00 A.M.-11:30 A.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Population Control

Speaker: Warren M. Crosby, M.D.

Moderator: William C. Scott, M.D.

SECTION II Room A2 Convention Center

Title: Granulomatous Disease of the Bowel

Speaker: G. V. Rohrer, M.D.

Moderator: William A. Susong, M.D.

SECTION III Room A3 Convention Center

Title: Hypothyroidism

Speaker: John L. Townsend, M.D.

Moderator: Neopito L. Robles, M.D.

11:30 A.M.-12:00 noon—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Common Sexual Hang-Ups and the "New" Psychophysiology of Sex

Speaker: Gordon H. Deckert, M.D.

Moderator: William C. Scott, M.D.

SECTION II Room A2 Convention Center

Title: Ischemic Colitis

Speaker: G. V. Rohrer, M.D.

Moderator: William A. Susong, M.D.

SECTION III Room A3 Convention Center

Title: Hypo-Natreamia and the Antiduirectic Hormone

Speaker: William O. Smith, M.D.

Moderator: Neopito L. Robles, M.D.

12:00 noon-1:45 P.M.—LUNCHEON RECESS

2:00 P.M.-2:30 P.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Assessment of Fetal Status in Utero

Speaker: Warren M. Crosby, M.D.

Moderator: Edward Sattenspiel, M.D.

SCHEDULE OF AFFAIRS

FRIDAY — APRIL 30, 1971

SECTION II Room A2 Convention Center

Title: Respiratory Effects of Septic Shock

Speaker: Clarence A. Guenter, M.D.

Moderator: Charles E. Henderson, M.D.

SECTION III Room A3 Convention Center

Title: Is Magnesium Important in Clinical Medicine?

Speaker: William O. Smith, M.D.

Moderator: R. J. M. Zeluff, M.D.

2:30 P.M.-3:00 P.M.—CONCURRENT SCIENTIFIC SESSIONS

SECTION I Embassy Room Above Hotel Lobby

Title: Vulvovaginal Candidiasis

Speaker: Richard C. Miller, M.D.

Moderator: Edward Sattenspiel, M.D.

SECTION II Room A2 Convention Center

Title: Treatment of Pulmonary Embolism

Speaker: James M. Hartsuck, M.D.

Moderator: Charles E. Henderson, M.D.

SECTION III Room A3 Convention Center

Title: Comparative Analysis of Defibrillators

Speaker: Gordon A. Ewy, M.D. — Ross D. Fletcher, M.D. — M. Dale Ewy

Moderator: R. J. M. Zeluff, M.D.

3:00 P.M.-3:30 P.M.—Visit the Exhibits — Visit the Exhibits — Visit the Exhibits
(Coffee served in the Scientific Exhibit Hall)

3:30 P.M.-5:00 P.M.—Panel Discussion Session Room A2 Convention Center

Title: The "Heretics" Are Our Own Children

Speaker: Gordon H. Deckert, M.D.

Moderator: T. Richard Gregory, M.D.

7:00 P.M.—President's Reception (No Host) North Poolside

8:00 P.M.—President's Banquet Convention Center

Guest Speaker: Mac F. Cahal, J.D.
Executive Director and General Counsel American Academy of General Practice

SATURDAY — MAY 1, 1971

HOUSE OF DELEGATES

8:00 A.M.-10:00 A.M.—Second Session Room A2 Convention Center

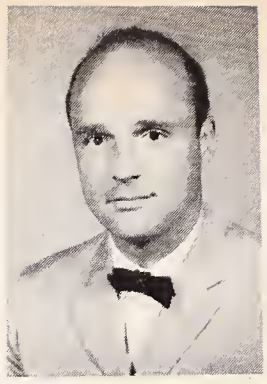
10:00 A.M.—Recess — Coffee available in back of meeting room

BLUE SHIELD

10:30 A.M.—Second Session Room A2 Convention Center

12:00 noon—Board of Directors Meeting Kudu Room

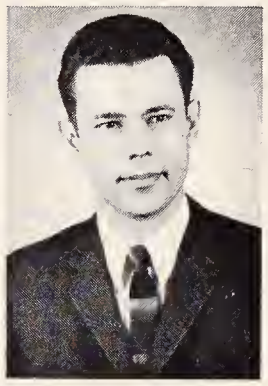
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ROBERT M. BIRD, M.D.
Dean, School of Medicine and Professor of Medicine & Physiology



JAMES M. HARTSUCK, M.D.
Assistant Professor of Surgery



WILLIAM O. SMITH, M.D.
Professor & Vice-Chairman Department of Medicine



WARREN M. CROSBY, M.D.
Professor & Vice-Chairman, Dept. of Gynecology & Obstetrics



JAMES L. LUKE, M.D.
Professor Department of Forensic Pathology



JOHN L. TOWNSEND, M.D.
Associate Professor Department of Medicine



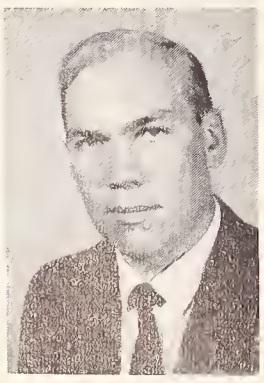
GORDON H. DECKERT, M.D.
Professor & Chairman, Dept. of Psychiatry and Behavorial Sciences



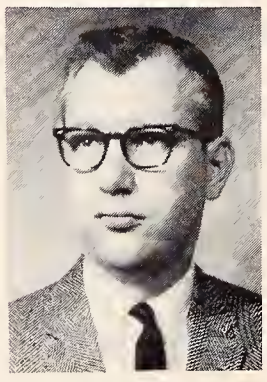
LLOYD E. RADER
Director of Public Welfare State of Oklahoma



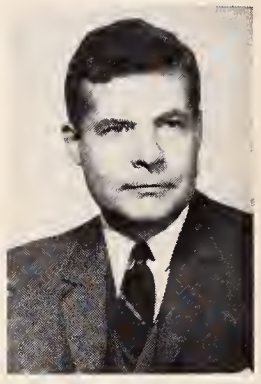
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Assistant Professor of Pediatrics



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Associate Professor of Medicine



G. V. ROHRER, M.D.
Associate Professor of Medicine & Radiology



G. RAINEY WILLIAMS, M.D.
Professor & Vice-Chairman, Department of Surgery

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STANDFORD M. GOLDMAN, M.D. — Phoenix

WAYNE F. WINN, M.D. — Phoenix

WOMAN'S AUXILIARY CONVENTION SCHEDULE

TUESDAY, APRIL 27, 1971

9:00 A.M.—Medical History Exhibits Room 156
1:00 P.M.—Hobby Show Convention Center
For your perusal and pleasure
See the outstanding exhibits

WEDNESDAY, APRIL 28, 1971

9:00 A.M.—Registration — Lobby Convention Center
9:00 A.M.—Visit the Hospitality Center Rooms 150 and 151
(Directly across from Convention Center)
Enjoy a cup of coffee, meet new members, and renew old acquaintances
9:00 A.M.—Hobby Show Convention Center
9:30 A.M.—Hamer Education Loan Committee Directors Room
9:00 A.M.—Medical History Exhibit Room 156
10:30 A.M.—Nominating Committee Patio Conference Room
11:00 A.M.—Pre-Convention State Board Meeting....Directors Room
7:00 P.M.—Annual Reception North Poolside
8:00 P.M.—Annual Steak Fry North Poolside Lawn
Dancing: Music by Desert City Six Plus One
Dress: Western or Casual

THURSDAY, APRIL 29, 1971

9:00 A.M.—Registration — Lobby Convention Center
9:00 A.M.—Visit the Hospitality Center Rooms 150 and 151
9:00 A.M.—Hobby Show Convention Center
9:00 A.M.—Coffee and Sweet Rolls Breakfast Directors Room
(Dutch Treat)
9:30 A.M.—First General Session Directors Room
Welcome
Introduction of County Presidents
Annual Reports
Report of Nominating Committee
Election of Officers
Adjournment
Immediately Following Adjournment —
New Nominating Committee Directors Room
9:00 A.M.—Medical History Exhibit Room 156
12:30 P.M.—Luncheon Royal Palm Inn
Invocation and In Memorium — Mrs. Lewis S. Winter
Address — Mrs. Floyd K. Anderson, National Director
Program — A personalized tour of the Cook Mansion and its many imported antiques by Richard Bidlake owner of La Galeria Bellas Artes; PLUS the Don Ruffin watercolor and oil exhibit personally conducted by the artist.
4:00 P.M.—New Executive Board Meeting Directors Room
7:00 P.M.—ArMPAC Annual Reception and Dinner..Conv. Center

FRIDAY, APRIL 30, 1971

9:00 A.M.—Registration — Lobby Convention Center
9:00 A.M.—Visit the Hospitality Center Rooms 150 and 151
9:00 A.M.—Hobby Show Convention Center
9:00 A.M.—Incoming and Outgoing Board Breakfast..Kudu Room
10:30 A.M.—Second General Session Directors Room
President's Report
Installation of Officers
Acceptance
Adjournment of 41st Annual Meeting
Immediately Following Adjournment —
Post Convention Board Meeting Directors Room
9:00 A.M.—Medical History Exhibit Room 156
12:30 P.M.—Luncheon Paradise Valley Country Club
Invocation — Dr. Perry Avery,
Church of the Red Rock, Sedona
Program — Ben Goo, Sculptor
"Beyond Today: The Creative Approach to a Personal Expression in Sculpture"
3:30 P.M.—Convention Center Room A-2
(All Auxilians and Guests are Invited to Attend)
Speaker: Gordon H. Deckert, M.D., Professor and Chairman of the Dept. of Psychiatry & Behavioral Sciences, University of Oklahoma Medical Center
Title: "The Heretics Are Our Own Children"
7:00 P.M.—President's Reception North Poolside
8:00 P.M.—President's Banquet Convention Center

WOMAN'S AUXILIARY

of the

Arizona Medical Association

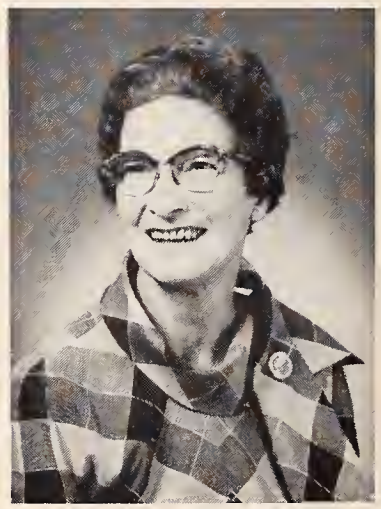
41st Annual Meeting

Official Program

YOUR PRESIDENTS



MRS. CHARLES E. HENDERSON
1971-72



MRS. J. BRUCE TUCKER
1970-71

HOBBY SHOW COMMITTEE
1971 STATE MEDICAL CONVENTION

Interest is mounting in the forthcoming Hobby Show to be sponsored by the Arizona Medical Association Women's Auxiliary at the Annual State Convention, scheduled for the last week in April at the Safari Hotel in Scottsdale.

The Hobby Show, a perennial favorite, will be a three-day feature of the convention, with exhibits on display from April 28th thru April 30th.

In keeping with the convention theme, '100 Years of Medicine in the Southwest," the Hobby Show will feature an additional award this year, covering art and hobby exhibits which are "Southwestern" in nature.

In addition to this special "Theme" Award (winners selected by jury), there will be the usual Sweepstake Award (voted most popular by visitors of the show), and numerous Ribbons of Merit in all categories (to be decided upon by jury).

Already many doctors and their wives are busily preparing some exciting entries. The rules are quite simple, and are briefly listed below:

1. Only works not previously shown in this Hobby Show will be elegible for exhibition.
2. Number of exhibits will be limited to three per person.
3. Entry blanks may be found in the current issues of *Arizona Medicine, Caduceus Crier*, and *Roundup*. They must be sent to your County Hobby Show representative (listed below) by April 20th.
4. Exhibits may be offered for sale if desired, with the price to be set by each individual exhibitor. A small fee will be withheld for support of future hobby show activities.

The Hobby Show has become a very popular event of the annual State Medical Convention, and each year brings increased participation. Show Chairman, Mrs. Kendall Sawrey (Rheta), and her co-chairman, Mrs. Robert Blair (Wink), are planning a few surprises in connection with this year's show, including a special "hospitality" area. They urge all Auxiliary members and their husbands to enter their hobbies, arts and crafts, and to come to visit and vote for their favorite exhibits. Here are a few suggested entry categories:

Oil paintings, water colors, acrylics, charcoals, collages, photography, graphics, ceramics, carvings, sculpture, needlecraft, and bead work. Other categories will be added according to hobbies submitted.

Following is a list of the representatives who will assist participants in the entering of their exhibits:

MARICOPA COUNTY:
Mrs. George Scharf
6301 N. 20th Street, Phoenix
Phone 955-8046

YUMA COUNTY:
Mrs. Franklin Johns
2355 Chico Lane, Yuma
Phone: 783-5077

PIMA COUNTY:
Mrs. Fred H. Landeen
4747 East Fort Lowell Rd., Tucson

YAVAPAI COUNTY:
Mrs. Francis Carr
1244 Overstreet Drive, Prescott

HOBBY SHOW REGISTRATION FORM

Mrs. Kendall Sawrey
4123 North 56th Street
Phoenix, Arizona Telephone 946-5480

I would like to enter the following item(s) in the Annual Meeting Hobby Show to be held April 27-30, 1971, at the Safari Hotel, Scottsdale, Arizona. Entries limited to three items per person.

Description in detail

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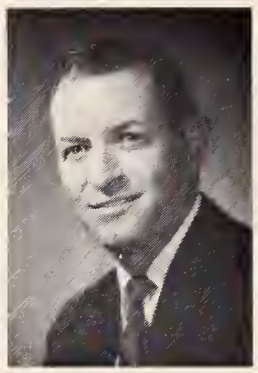
I agree to deliver the items to the Convention Center of the Safari Hotel, Tuesday, April 27, 1971, between 9 a.m. and 5 p.m., if possible. I agree to pick up above items by 12 noon, Friday, April 30, 1971.

Name

Address

HOW I DO IT

EDITOR'S NOTE: This is the first of a series of short practical articles on "How I Do It" by members of the Arizona Medical Association. Future articles will be reviewed and edited by Dr. Daniel B. Carroll who originated the idea. Please put him to work and make this a useful, interesting section. Send these brief articles to Arizona Medicine.



DANIEL B. CARROLL, M.D.

TREATMENT OF "CORTISONE SKIN" INJURIES

"Cortisone skin" is a term probably not found in the medical dictionaries. It refers to the fragile atrophic skin of patients who have been treated with corticosteroid preparations for a prolonged period of time.

One of the many side effects of steroid therapy is a severe diminution or atrophy of the dermal collagen, causing the skin to be very fragile. It is the dermis which gives the skin its "body" and protects a rich vascular network immediately beneath the skin.

The pretibial area, the ulnar area of the forearm and the dorsum of the hand are particularly susceptible to injury in those patients with "cortisone skin." With the diminution of dermal collagen, a very minimal superficial injury — which would be inconsequential in a patient with normal skin — may cause two problems, which may occur simultaneously and concurrently:

1. There may be severe avulsion of the skin, with a full-thickness tissue loss. The thin atrophic skin may be rolled up like a flap, but it is only as thick as a skin graft and may be quite ecchymotic.

2. A subcutaneous hematoma of considerable size may occur.

The avulsed skin injury produces a wound that may require skin grafting for closure; the hematoma may cause necrosis of the overlying skin. Treatment of the avulsed wound is quite different from similar wounds in normal skin. "Cortisone skin" is thin and friable and reacts to handling and suturing as though it were a piece of wet Kleenex. When sutures are inserted into it, they pull through, shredding the skin. The wound should be treated by gently rolling the skin to cover as much of the wound (hopefully the whole wound) as possible without tension, if none of the skin has actually been lost.

The peripheral skin flap and adjacent area should be painted with tincture of Benzoin. The avulsed skin itself should be painted with tincture of Benzoin on a relatively dry Q-Tip or applicator stick. The avulsed skin should then be secured to the peripheral skin by means of ⅛-inch or ¼-inch Steri-Strips. A non-adherent dressing (such as vaseline gauze, Adaptic or Telfa) is placed over the repair and then covered with a firm, well-padded circumferential wrapping of Kling or Kerlix. This bulky dressing will serve the double function of immobilizing the replaced skin and acting as a "bumper" against additional trauma. If necessary, a plaster splint may be used for additional immobilization and protection.

Hematomas should be evacuated promptly. Aspiration, even if done with a large bore needle, is relatively futile. A small stab wound placed in the center of the injured area (this skin will probably be anesthetic) permits extracation of the clot with sterile forceps. The remaining clot may then be rolled out gently with Q-Tips or applicator sticks. This procedure should be repeated daily until the clot is completely evacuated. The same dressing technique is used for the avulsed skin. If the pretibial area is involved, bed rest and elevation of the extremity is advised.

If the above procedures are used to treat "cortisone skin" injuries, hospitalization and multiple surgical procedures may be avoided.

Daniel B. Carroll, M.D.

Topics Of Current Medical Interest

THE TRAVELERS INSURANCE COMPANIES

PROVIDE MALPRACTICE

INSURANCE PROGRAM FOR ArMA MEMBERS

A great step forward was taken by the Board of Directors of the Arizona Medical Association when they endorsed a Travelers Insurance Company Professional Liability Insurance program for members of the Association. The program includes:

- $100,000 full liability coverage for each claim.
- $200,000 Annual Aggregate Limit.
- $1,000,000 excess coverage for each claim and annual aggregate over the first two coverages.
- Provides for optional layers of excess limits of liability in units of one million dollars if the individual physician desires.
- Starting rates will be based on Insurance Rating Bureau rates until enough experience is developed at which time the rates will be based on the plans own experience, at which time it will be self rating.
- Plan is available *only* to ArMA members and those who are actively applying for membership.
- Travelers will provide ArMA full disclosure of incurred losses, paid claims, open claims, claims expense and earned premium on a semi-annual basis.
- Travelers will guarantee five year renewability after a minimum enrollment is reached.
- Lloyds Discovery Period — Those members currently insured in Lloyds are faced with a three year discovery period upon nonrenewal of their current policy. The charge, to provide protection after the Lloyds discovery period ends, will be 50% of the first year's premium.
- Coverage shall include all liability arising out of the performance or the failure to perform any professional service, including service on *any duly constituted committee, established by any medical society or hospital staff or pursuant to any law.* (The latter is most important in light of increasing peer review activities.)
- Plan provides office premises liability and shall include all bodily injury liability and property damage liability arising out of the ownership, operation, and maintenance of one or more professional offices. There is no requirement that you purchase ancillary insurance (homeowners, life etc.) in order to participate.
- You need not cancel your present policy, you need only sign an application indicating you will participate when your present policy does expire.

- Program provides that you must *agree* in writing *before* Travelers can settle any claim that may be filed against you.
- There is no restriction on the "new" or "young" doctor as long as he is actively applying for county society membership or is a member.
- There will be no automatic cancelling of coverage because of age etc.

In case you haven't heard of The Travelers Insurance Companies, they are one of the largest in the country with an annual premium income of two and one quarter *billion* dollars. They have over 29,200 employees. Started in 1864. Can provide insurance coverage in more than 120 countries and territories throughout the world. Have current assets in excess of six *billion* dollars. They have been around a long time and plan to be around a long time.

The Travelers have designated their two oldest and largest agencies in the state to market the plan for ArMA, they are:

FOR PHOENIX AREA
Burns-Harrelson-Burns
5045 North 12th Street
Phoenix — Phone: 266-4411

FOR TUCSON AREA
Patzman-Allen-Lamb & Associates
3964 East Pima
Tucson — Phone: 327-5981

Additional Travelers agents will be named in Yuma and elsewhere. As soon as we are told who they are, we will advise you.

Men from these agencies will be the official representatives of ArMA's program and we would urge you to take the time to talk with them. The Board of Directors unanimously endorsed this program based on the integrity and high quality of the company as well as, the very favorable rates offered, which we believe to be considerably lower than most companies writing this type of full coverage insurance in Arizona. To maintain the lower rates and keep the program in operation, we need substantial participation from the members. When you are contacted about this program please consider it carefully.

Remember that the success and guaranteed renewability of this attractive new program is dependent upon your participation.

THE PHYSICIAN'S ASSISTANT IN ARIZONA

The numerous discussions and papers concerning the Physician's Assistant indicates that a new system for the delivery of health care has appeared. This concept is a logical extension (with specific definition) of an aspect of the health delivery system which we have always used. We will discuss this concept and the statutory authorization and restrictions, training programs, specific tasks that could be delegated, aspects of the use of a physician's assistant in certain specialties, the legal ramifications of the utilization of physician's assistants and finally ethical considerations of their use. As one reviews the dispersion of physicians and physician support personnel in Arizona, the mal-distribution of resources is evident. For example, Graham County has only 15 active nurses and 4.3 physicians per 10,000 population as opposed to state averages of 40 nurses and 12.1 physicians. Many other counties have a similar situation. The utilization of physician support personnel is one approach to meeting this problem.

THE RATIO OF ACTIVE MEDICAL DOCTORS PER POPULATION x 10,000 IN ARIZONA, 1960 – 1965 – 1970

	1960	1965	1970
NORTH			
Apache	2.3	3.3	3.1
Coconino	6.2	6.5	9.9
Mohave	5.2	5.7	6.8
Navajo	2.1	2.0	2.6
Yavapai	8.3	9.7	10.3
NORTHERN AREA	4.7	5.2	6.6
Maricopa	9.4	11.5	13.7
Pima	11.1	12.3	15.3
SOUTH			
Cochise	5.1	5.0	5.4
Gila	8.1	6.2	6.7
Graham	5.0	3.6	4.3
Greenlee	6.1	5.7	4.0
Pinal	4.5	5.6	5.4
Santa Cruz	7.4	5.7	8.0
Yuma	6.5	6.1	7.0
SOUTHERN AREA	5.7	5.5	5.9
TOTAL STATE	8.6	10.0	12.1

"How would a physician's assistant improve health care in Arizona?" First the physician's assistant would permit the physician to delegate many routine aspects of clinical practice and free himself for greater attention to patients who

THE FOLLOWING ARTICLE WAS PREPARED BY THE SECTION ON PHYSICIAN'S ASSISTANTS OF THE LOCUM TENENS AND HEALTH MANPOWER COMMITTEE TO HELP THE MEMBERSHIP TO UNDERSTAND THIS NEW CATEGORY OF HEALTH SUPPORT PERSONNEL, THE PHYSICIAN'S ASSISTANT.

require his special skills. If the delegation included freedom of the physician's assistant to recognize minor disease or injury and institute appropriate treatment, the increased time available to the physician would be considerable. In addition to giving more time to astute analysis, more importantly this would provide increased time for compassionate discussion of patient problems. This would assist in restoration of the image our patients desire. The quality of health care can be measured in many ways, but the patient measures it by his perception of a physician as "one who has the time to care."

Secondly, the physician's assistant can improve health care in Arizona by providing a level of care where little exists now. In the small rural community, under appropriate supervision, much primary health care can be delivered by the physician's assistant. When the assistant recognizes a case as beyond his capability, he makes the needed arrangements for prompt physician attention. To the worried patient it is reassuring to be told, "You need to see Dr. ———— promptly, and I'm making arrangements for him to see you as soon as possible." Even more reassuring would be the statement "To ensure that nothing untoward develops while you are getting there, I will be going with you."

We must accept that the physician's assistant may be the final authority and the only practitioner that the patient will see. It must further be accepted that the assistant is the agent of the physician who is responsible for the assistant's actions, equally for acts of omission as well as commission. If this appears to be a tremendous delegation of responsibility, it must be examined in light of our present (and often ill defined) delegation to various ancillary personnel. Today the office nurse or receptionist often determines whether a patient receives an appointment today, is scheduled for later, referred to an emergency room or to a colleague who may be taking your calls. This is delegation of authority (but not responsibility). It certainly is accompanied by well understood guidelines, and by custom and tradition, and has patient acceptance. Broader delegation has been given to your office nurse, who may give intramuscular or intravenous medication. The role of the public health nurse in the well-baby clinic paved the way for similar delegation in the pediatrician's office. In the emergency room tacit approval was given to the initiation of measures to combat shock pending the arrival of the physician. The industrial nurse has broad authority for the treatment of minor illness and injury. In the Student Health Services of many colleges and universities the nurse frequently operated at the level we now refer to as Nurse Practitioner. But it was in the military where the concept of the physician's assistant was developed and was exploited to the maximum. In all three services corpsmen were used to screen the men reporting sick. Those with minor illness or injury were treated (*including* the decision for administration of drugs or a tetanus booster) and returned to duty or kept under medical surveillance. X-rays were ordered, and if the physician diagnosed a fracture in many cases the corpsman applied the splint or cast. The suturing of lacerations by

corpsmen was almost routine at some stations. The zenith of this responsibility was that of independent medical duty on a small ship of the Navy or a small isolated station of the Air Force. In these two situations the corpsman represented the medical resource of 50-200 men. Although he had a physician consultant available by radio or phone, he made the decision to treat or to discuss the case with his physician consultant.

Although this civil and military delegation has been common, it is seldom challenged. To ensure that whatever delegation might be made to a physician's assistant rests solidly on statutory authority the 30th Arizona Legislature is considering a revision of the Medical Practice Act. Similar consideration is expected for the osteopathic physician's assistant. This revision consists of amendment of section 32-1421 and 32-1431 of Arizona Revised Statutes (see your Board of Medical Examiners directory). The amendment is the addition of the capitalized portion of the following paragraphs.

32-1421. *Acts and persons not affected by this chapter*

This chapter shall not be construed to apply to or inhibit:

9. ANY ACT, TASK OR FUNCTION PERFORMED BY A PHYSICIAN'S ASSISTANT APPROVED BY THE BOARD PROVIDED THAT:

(a) THE PHYSICIAN'S ASSISTANT IS APPROVED BY THE BOARD AS ONE QUALIFIED BY TRAINING OR EXPERIENCE, OR BOTH, TO FUNCTION AS A PHYSICIAN'S ASSISTANT.

(b) THE ACT, TASK OR FUNCTION IS PERFORMED AT THE DIRECTION AND UNDER THE SUPERVISION OF A LICENSED PHYSICIAN IN ACCORDANCE WITH RULES AND REGULATIONS OF THE BOARD.

32-1431. *Fees*

The board shall charge fees . . .

10. SUCH ADDITIONAL FEES FOR SERVICES WHICH THE BOARD DEEMS APPROPRIATE TO CARRY OUT THE PURPOSES OF SECTION 32-1421, PARAGRAPH 9 AS MAY BE NEEDED TO COMPENSATE FOR THE COST OF RENDERING SUCH SERVICES.

The Board of Medical Examiners has under consideration proposed rules and regulations required by the amendments cited above. The announcements and public hearing on these rules will follow the usual statutory procedures. With passage of the legislation and adoption of appropriate rules and regulations, the legal basis for the use of physicians' assistants will be established.

The proposed rules and regulations envision a very close one-to-one relationship. That is, the assistant would be directly responsible to a specific physician who would be legally responsible for the actions of the assistant. Any change of employment by the assistant would require BOMEX approval. The physician himself would also have to meet certain criteria before he would be authorized to employ a physician's assistant.

Many variations of physician's assistants are developing. There are over a hundred courses in development or in existence. The National Academy of Science, The American Medical Association, and the Department of Health Education and Welfare have encouraged innovation and development of physician support personnel. These groups have recognized that a varied entry background is possible for the different types of assistants. Thus we have seen the development of the Nurse Practitioner who has had special training after earning the R.N. designation and in a different program the high school graduate with experience and training in the military service has been trained as a Physician's Assistant to a Family Practitioner. Other variations are known. Although curricula varies in their clinical phase, there is a great similarity in the basic training. There is usually a six to nine month academic phase split between basic medical information and training closely related to the role the physician's assistant is to assume. This is then followed by a preceptorship in direct support of this role.

One curriculum that is being developed in the Air Force is as follows (laboratory hours are included in the total and 1 year is spent in academic phase).

Introduction to Radiology	24 Hours
Introduction to Epidemiology	48 Hours
Clinical Psychiatry	51 Hours
Computer Applications in Medicine	18 Hours
Clinical Medicine	289 Hours
Animal Surgery	60 Hours
Patient Evaluation	120 Hours
Emergency Medical Care	30 Hours
Medical History, Philosophy and Ethics	18 Hours
Anatomy	136 Hours
Physiology	72 Hours
Pharmacology	62 Hours
Inorganic and Bio-Chemistry	102 Hours
Clinical Chemistry	36 Hours

Clinical Microbiology	34 Hours
Basic Clinical Laboratory	60 Hours
Medical Terminology	18 Hours

Curricula that has been developed cover the basic sciences, history taking, conducting physical examinations, doing simple laboratory tests, etc.

The second year of the program is a preceptorship directly related to the final role expected of the physician's assistant. The specialty concerned conducts the program so that the student learns the problems that can be expected to resolve, whether this be in pediatrics, orthopedics, urology or general medicine.

What functions we can expect from a physician's assistant? You, as the employing physician must decide those functions. There is no area more critical to the successful use of a physician's assistant than clearly defined limitations of activity. One way to insure this is to develop a procedures manual that spells out in detail exactly what he is authorized to do.

Among the activities that might be given a physician's assistant are:

1. Data collection, history taking, doing appropriate parts of the physical examination, screening procedures, such as vision and hearing, as well as, simple laboratory tests.
2. Recognition and management of minor illnesses.
3. Recognition of disease that is more than minor and referral to the physician.
4. Home visits to determine severity of complaints or whether the patient's progress is satisfactory. Periodic visits to extended care facilities and nursing homes to report the condition of patients therein.
5. Visits to hospitalized patients during their convalescense.
6. Explanations to and minor counselling of patients as authorized by the physician.
7. Suturing of minor lacerations, splinting or immobilization of sprains or fractures, application or removal of casts, and other tasks in the management of minor trauma.

One could undoubtedly list dozens of other procedures and activities for the physician's assistant but the above is a list which could be expanded or contracted according to the desires of the employing physician.

It is to be noted that emergency medical services was 30 hours of the instructional program above. The physician's assistant, particularly in a remote area, may become the total medical capability for a wide variety of medical, surgical or traumatic emergencies that arise in areas where no physician is present. In such circumstances he becomes a positive factor for saving life by the application of restorative or resuscitative measures to bring the victim of the emergency to the best possible condition for transportation to a definitive medical care facility. It is possible that the physician's assistant might well become a key figure in the emergency room, particularly in the smaller hospitals of the State.

A number of questions concerning legal aspects of the physician's assistant's activities are unanswered. In finality these will be adjudicated in the Courts. It is to be expected, however, that as an agent of the employing physician the assistant will be recognized as competent to carry out the tasks assigned to him, but the responsibility for the proper execution will rest with the employing physican. Similar recognition can be expected in matters concerning industrial compensation and other quasi-legal activities. In the matter of malpractice, the physician's assistant merely adds one more member to the team for whom the physician assumes liability in the practice of medicine.

The practice of medicine is the translation of scientific knowledge into actions and language the patient can understand. It is the compassionate interest to really listen and hear what the patient is telling you, and to explain to the patient his condition in a way he truly understands. The cornerstone of the practice of medicine is medical ethics. An important part of ethics is the discussing with the patient what you know, and admitting and assessing the import of what you do not know. The astute approach to the delicate line between fact and theory, between fact and possibility, and between fact and probability is indeed a difficult task. Certain principles of ethics can be taught, and learned by association with one's preceptors and colleagues. We must make a place in our medical societies for the physician's assistant, and whatever type of membership we provide, it must be one that welcomes him as a full member of the team. We must allow his participation in our meetings, find a place for him on committees, and even more important, assist him in developing the ethics of his vocation. How does one learn ethics if not by association?

There is a role for the physician's assistant in Arizona. How well he fills that role depends on the physicians of Arizona.

In Memoriam

DAVID MARVIN MARCUS, M.D.

David Marvin Marcus was born at Montello, Massachusetts on November 30, 1900. After elementary and high school education he went to Detroit where he graduated from Detroit Junior College. He received a Bachelor of Science degree at Wayne University in 1921, his medical degree at the University of Michigan in June 1925 and his internship at Detroit Receiving Hospital the following year.

While practicing medicine at Detroit, he also worked in the out-patient medical clinic at Woman's Hospital and in the Dermatology section of the North End Clinic. As a student of cardiology, he participated in post-graduate seminars yearly at the Universities of Michigan and Illinois.

When he moved to Arizona he had a small and moderate practice in his own home in Phoenix, and was on the staff of Memorial and St. Luke's Hospitals. An alert and inquisitive physician, he attended seminars at the Mayo Cliinc, the Universities of Michigan and Texas and the County Hospital at New Orleans. His primary interest was consistently cardiology. He was an avid reader of current medical journals, and he dedicated himself to the care of his patients.

Although he was a member of the Maricopa County Medical Society, the Arizona Medical Association, the American Medical Association and a Fellow of the Arizona Society of Internists, he was aloof and a loner and did not join any other clubs or organizations. He did not serve in the armed services, he never married and he had no immediate family or intimate friends.

A fulminant dissemination of a malignancy of the colon culminated in his death on October 16, 1970.

Farewell, fellow physician. Peace be with you.

"There is no death! What seems to be transition; this life of mortal breath is but a suburb of the life elysian, whose portal we call death."

—Longfellow

Letters to Editor

December 18, 1970
Arizona Medicine Managing Editor
810 West Bethany Home Road
Phoenix, Arizona

Dear Bruce:

It is with a great feeling of humbleness yet pride in noting that *Arizona Medicine* bestowed the honor of placing the Navopache plaque on the front cover of a recent issue of *Arizona Medicine*. Please convey my thanks and appreciation to the editors. All effort will be made to live up to the expectations of improved medical care to the people in this area now that the hosiptal has opened its doors and is operating.

Very truly yours,
Arnold H. Dysterheft, M.D.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

AD HOC COMMITTEE ON CONTINUING MEDICAL EDUCATION

The meeting of the Ad Hoc Committee on Continuing Medical Education of the Arizona Medical Association, Inc., held Tuesday, January 12, 1971 convened at 7:08 p.m., Robert E. T. Stark, M.D., Chairman, presiding.

ROLL CALL

PRESENT: Drs. Cohen, Melvin L.; Crouch, Boyden L.; Jennett, Raymond J.; Sattenspiel, Edward, Secretary; Stark, Robert E. T., Chairman; Wagner, Albert G.

Staff: Messrs. Barnett, Gary L., Associate Executive Director; Robinson, Bruce E., Executive Director.

EXCUSED: Drs. Crosby, David J.; Melick, Dermont W.

MINUTES

The minutes of the meeting held December 15, 1970 were approved as distributed.

RESOLUTIONS

The Committee reviewed the proposed resolutions dealing with the continuing medical education requirements and changes in the bylaws to provide for a Standing Committee on Medical Education.

It was moved and carried to re-draft the Resolutions to include the changes made and mail them to the Com-

mittee members for written approval and/or additional changes.

Meeting adjourned 9:18 p.m.

Edward Sattenspiel
Secretary

LEGISLATIVE COMMITTEE

The meeting of the Legislative Committee of the Arizona Medical Association, Inc. held Sunday, January 24, 1971 convened at 10:08 a.m., Richard O. Flynn, M.D., Chairman presiding.

MINUTES

The minutes of the meeting held October 18, 1970 were approved as distributed.

RESIGNATION

A. J. Ochsner, M.D. has found it neeessary to request resignation from the Legislative Committee due to a possible conflict of interest, as he he also a member of the State Board of Health. Dr. Ochsner's resignation was accepted.

CONSIDERATION OF LEGISLATION — 30th LEGISLATURE

Limiting Liability — Transfusions

Mr. Robert C. Kelso, Counsel for Blood Services, requests the Association's support for legislation to resolve the legal liability without fault problem in the transmission of hepatitis.

IT WAS MOVED AND CARRIED TO OFFER ACTIVE SUPPORT WITH BLOOD SERVICES TO ENACT LEGISLATION TO LIMIT LIABILITY IN TRANSFUSIONS.

Child Hearing Evaluation

Max L. Wertz, M.D. requests support in enacting legislation requiring hearing evaluation tests of all ehildren in private, public and parochial schools. The Arizona State Chapter of the American Aeademy of Pediatrics favors this legislation by letter of January 21, 1971.

IT WAS MOVED AND CARRIED TO OFFER GENERAL SUPPORT TO THE ENACTMENT OF MANDATORY HEARING EVALUATION TESTS.

Compulsory Immunization

The Arizona State Department of Health has drafted a bill to provide for certification of ehildren entering sehool for the first time to be immunized against certain diseases.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO COMPULSORY IMMUNIZATION EXCEPT THAT THE DISEASES TO BE IMMUNIZED AGAINST SHOULD NOT BE SPECIFIED, BUT USED AS EXAMPLES.

Physician's Assistants (H.B. 21)

There was eonsiderable discussion on a bill introduced to allow for a physician's assistant.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO THE CONCEPT OF A PHYSICIAN'S ASSISTANT AND REQUESTS THAT THE LEGISLATURE SEEK WAYS AND MEANS TO ALLEVIATE THE PROBLEMS THAT INCREASE PROFESSIONAL LIABILITY.

Abortion (H.B. 51)

Gary Bennett reported that the suit by Planned Parenthood in the Federal District Court is being held pending a ruling by the U.S. Supreme Court in the case of U.S. vs Milan Vuitch. The Vuitch case was heard on January 12, 1971 and a decision can be expected within six weeks.

Senator Holsclaw requested the position of the Association regarding the repeal of the abortion statutes.

IT WAS MOVED AND CARRIED TO ACTIVELY SUPPORT THE REPEAL OF ABORTION STATUTES AND TO SUGGEST THAT THERE BE A DEFINITION OF ABORTION ACCORDING TO THE PERIOD OF GESTATION AS DEFINED IN THE VITAL STATISTICS STATUTES OF THE STATE AND THAT ABORTION BE PERFORMED IN A LICENSED FACILITY AS APPROVED BY THE ARIZONA BOARD OF HEALTH.

Limitation of Attorney's Contingency Fees

This proposed bill is a result of the Joint Legislative Interim Study Committee on Malpractice, to limit the amount of contingency fee to an attorney.

IT WAS MOVED AND CARRIED TO OFFER GENERAL SUPPORT OF THIS LEGISLATION IF INTRODUCED.

Full Disclosure of Professional Liability Insurance Claims

This bill was proposed by the Joint Legislative Interim Study Committee to require insurers to disclose to the Insurance Department loss and expense experience.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT TO DISCLOSURE OF INSURERS LOSS AND EXPENSE EXPERIENCE.

Malpractice Screening Panels

The Joint Legislative Interim Committee on Malpractice proposes legislation to provide for creation of malpractice screening panels sueh as the Pima Plan.

IT WAS MOVED AND CARRIED TO REFER THIS TO THE AD HOC COMMITTEE ON PROFESSIONAL LIABILITY LEGISLATION.

Malpractice Assigned Risk Plan

The Joint Legislative Committee on Malpraetice suggest legislation to provide for medical malpractice liability policies to applicants who are unable to obtain eoverage through ordinary methods by an assigned risk plan of casualty insurance companies.

IT WAS MOVED AND CARRIED TO GIVE GENERAL SUPPORT OF THIS CONCEPT.

Definition of Malpractice

IT WAS MOVED AND CARRIED TO REINTRODUCE LEGISLATION TO DEFINE ACTION FOR MEDICAL MALPRACTICE AS ORIGINALLY INTRODUCED DURING THE LAST SESSION (H.B. 278).

Confidentiality of Certain Hospital Committee Records, and Immunity for Service on Utilization Review Committees.

Arizona Blue Cross and Blue Shield request support of legislation to provide immunity for persons serving on a health care utilization review committee.

IT WAS MOVED AND CARRIED TO OFFER ACTIVE SUPPORT FOR COMBINED LEGISLATION TO PROVIDE IMMUNITY FOR SERVING ON A UTILIZATION REVIEW COMMITTEE AND THE CONFIDENTIALITY OF CERTAIN HOSPITAL COMMITTEE RECORDS AS INTRODUCED DURING THE LAST SESSION AS H.B. 52.

Rescue Teams

IT WAS MOVED AND CARRIED TO INTRODUCE LEGISLATION TO LIMIT LIABILITY OF HOSPITAL RESCUE TEAMS AS PREPARED FOR THE PAST SESSION.

Emergency Medical Care

IT WAS MOVED AND CARRIED TO REINTRODUCE LEGISLATION TO PROVIDE FOR LIMITING LIABILITY FOR RENDERING EMERGENCY MEDICAL CARE ARISING OUT OF PRIOR MEDICAL CARE AS INTRODUCED IN LAST SESSION. (H.B. 277).

Statute of Limitations

IT WAS MOVED AND CARRIED TO INTRODUCED AND **ACTIVELY SUPPORT** LEGISLATION TO PROVIDE FOR A STATUTE OF LIMITATIONS BASED ON ONE YEAR FROM TIME OF DISCOVERY OR FOUR YEARS FROM DATE OF INJURY, WHICHEVER OCCURS FIRST, AS ENACTED IN CALIFORNIA.

Res Ipsa Loquitur Doctrine

IT WAS MOVED AND CARRIED TO INTRODUCE AND **ACTIVELY SUPPORT** LEGISLATION TO FREEZE INTO LAW THE RES IPSA LOQUITUR DOCTRINE AS IN CALIFORNIA.

State Plan for Health Care (H.B. 5)

House Bill 5 provides for the development of a state health care plan by the Arizona Health Planning Authority in collaboration with the College of Medicine and provides for an appropriation.

IT WAS MOVED AND CARRIED TO SUPPORT THE APPROPRIATION OF $150,000 TO THE ARIZONA HEALTH PLANNING AUTHORITY UNDER THIS BILL; HOWEVER, OFFER NONSUPPORT OF REMAINDER OF THE BILL AS THIS IS ALREADY THE CHARGE OF THE PLANNING AUTHORITY.

State Employees Group Health Insurance Program (H.B. 15).

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO H.B. 6 PROVIDING FOR AN APPROPRIATION AND STUDY TO PROVIDE A PLAN OR PLANS FOR A GROUP HEALTH INSURANCE FOR STATE EMLOYEES.

Hospital Construction & Licensing (H.B. 15)

H.B. 15 provides for approval of construction, acquisition, licensure and regulation of health care institutions by the State Board of Health.

IT WAS MOVED AND CARRIED TO GIVE THIS BILL **NONSUPPORT** AS IT INTERFERS WITH PRIVATE ENTERPRISE.

Regulation of Health Care Institutions

This proposed legislation is by the State Department of Health and provides for licensure and regulations of health care institutions to clarify authority of minimum standards of operation.

IT WAS MOVED AND CARRIED TO OFFER **GENERAL SUPPORT** TO THE STATE HEALTH DEPARTMENT FOR ENACTMENT OF THIS LEGISLATION.

Health Care for Indigent Sic k(H.B. 16)

I WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO PROVIDE FOR REVIEW AND DEVELOPMENT BY THE HEALTH PLANNING AUTHORITY FOR PROGRAMS OF CARE FOR THE INDIGENT SICK.

Hospital Rate Control by the State (H.B. 18)

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION TAKE **NO ACTION** IN H.B. 18 AS INTRODUCED WHICH PROVIDES FOR THE COMMISSIONER OF THE STATE DEPARTMENT OF HEALTH TO APPROVE OF THE CHARGES OF HOSPITALS AS JUST AND REASONABLE THROUGH HEARINGS, JUDICIAL REVIEW AND PROVIDING PENALTIES AND DAMAGES.

Hospital Audit by Auditor General (H.B. 24)

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION TAKE **NO ACTION** IN H.B. 24 PROVIDING THE AUDITOR GENERAL AUTHORITY TO INQUIRE INTO FINANCIAL RECORDS OF NONPROFT HOSPITAL, HOSPITAL AND MEDICAL SERVICE CORPORATIONS.

Control of Unauthorized Insurers

IT WAS MOVED AND CARRIED TO RECEIVE **FOR INFORMATION ONLY** PROPOSED LEGISLATION WHICH PROVIDES FOR REGULATION AND CONTROL OF THE CONDUCT OF INSURERS NOT AUTHORIZED TO CONDUCT AN INSURANCE BUSINESS IN THE STATE.

Drug Abuse Control (H.B. 1)

House Bill 1 establishes a department of drug abuse control, and an advisory council designed to prevent and control drug abuse and on July 1, 1973 to establish a drug abuse section in the Division of Mental Health of the Department of Health.

IT WAS MOVED AND CARRIED TO GIVE H.B. 1 **GENERAL SUPPORT.**

Alcohol/Drug Violations (S.B. 22)

IT WAS MOVED AND CARRIED TO ACCEPT S.B. 22 WHICH PROVIDES FOR TEN PERCENT ADDITIONAL FINE FOR DRUG VIOLATIONS, **FOR INFORMATION ONLY.**

Manufacturing Dangerous Drugs (H.B. 50)

IT WAS MOVED AND CARRIED TO ACCEPT H.B. 50 **FOR INFORMATION ONLY** WHICH PROVIDES FOR PROHIBITION TO ATTEMPT TO MANUFACTURE DANGEROUS DRUGS.

Instructions Concerning Alcohol, Tobacco, Narcotic & Dangerous Drugs (S.B. 21)

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO SENATE BILL 21 WHICH PROVIDES FOR EXPANDING THE COURSES OF INSTRUCTION IN SCHOOLS REGARDING THE NATURE AND EFFECT OF ALCOHOL, TOBACCO, AND DANGEROUS DRUGS ON THE HUMAN SYSTEM.

Triplicate Prescriptions (Last Session H.B. 225)

IT WAS MOVED AND CARRIED TO GIVE **ACTIVE NONSUPPORT** TO A PROPOSED BILL REQUIRING THAT PRESCRIPTIONS FOR NARCOTICS SHALL BE WRITTEN IN TRIPLICATE ON SERIALLY NUMBERED, OFFICIALLY ISSUED BY THE DEPARTMENT OF PUBLIC SAFETY IN GROUPS OF 100.

Hypodermic Syringe or Needles

IT WAS MOVED AND CARRIED TO RECEIVE PROPOSED LEGISLATION TO CONTROL SALE AND TRANSFER, AND DESTRUCTION OF HYPODERMIC SYRINGE OR HYPODERMIC NEEDLES **FOR INFORMATION ONLY.**

Penalty for Prescribing Narcotic Drugs in other than Good Faith (S.B. 44)

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO S.B. 44 WHICH PROVIDES FOR A PENALTY WHEN A PHYSICIAN, OSTEOPATH OR DENTIST PRESCRIBES IN OTHER THAN GOOD FAITH OR IN THE COURSE OF HIS PROFESSIONAL PRACTICE.

Alcoholic — Permanent Disability (S.B. 45)

IT WAS MOVED AND CARRIED TO GIVE **NONSUPPORT** TO SENATE BILL 45 PROVIDING THAT; A PERSON INFLICTED WITH ALCOHOLISM QUALIFIES AS BEING PERMANENTLY AND TOTALLY DISABLED FOR PURPOSES OF MEDICAL INDIGENT ASSISTANCE AS IT DOES NOT PROVIDE FOR COMPREHENSIVE MEDICAL CARE.

Defining U.S.P. Alcohol as a Drug (S.B. 46)

IT WAS MOVED AND CARRIED TO RECEIVE SENATE BILL 46 DEFINING U.S.P. ALCOHOL AS A DRUG **FOR INFORMATION ONLY.**

Blood Alcohol Weight from 0.15 to 0.10 (S.B. 67)

IT WAS MOVED AND CARRIED **TO RECEIVE** SENATE BILL 67 REDUCING THE BLOOD ALCOHOL LEVEL FROM 0.15 TO 0.10 AS RECOMMENDED BY THE NATIONAL SAFETY COUNCIL.

Establish Department of Mental Health (H.B. 9)

House Bill 9 establishing a State Department of Mental Health.

IT WAS MOVED AND CARRIED TO GIVE **NONSUPPORT** TO HOUSE BILL 9 WHICH PROVIDES FOR A SEPARATE DEPARTMENT OF MENTAL HEALTH AS IT FRAGMENTS ADMINISTRATION AND MAY DUPLICATE PROGRAMS.

Minors Consent for Drug Treatment

IT WAS MOVED AND CARRIED TO OFFER **GENERAL SUPPORT** TO THE CONCEPT PROVIDING AUTHORITY TO TREAT MINORS FOR DRUG USE.

Minors Consent for V.D. Treatment

IT WAS MOVED AND CARRIED TO GIVE **ACTIVE SUPPORT** TO THE STATE DEPARTMENT OF HEALTH IN PROVIDING THAT MINORS MAY GIVE CONSENT TO TREATMENT FOR V.D.

Providing Patient Records (S.B. 13)

IT WAS MOVED AND CARRIED TO GIVE **ACTIVE NONSUPPORT** TO SENATE BILL 13 WHICH PROVIDES THAT A PROFESSIONAL SHALL FURNISH A COPY OF ALL RECORDS UPON RECEIPT OF A REPRODUCTION FEE TO THE PATIENT.

Health Information Center

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO THE STATE DEPARTMENT OF HEALTH WHICH PROVIDES FOR THE ESTABLISHMENT OF A HEALTH INFORMATION CENTER WITHIN THE DEPARTMENT.

Labor Camps (S.B. 48 & H.B. 73)

IT WAS MOVED AND CARRIED TO GIVE THE STATE DEPARTMENT OF HEALTH **GENERAL SUPPORT** IN REGULATING AND LICENSING OF LABOR CAMPS.

Certification of Water Treatment Operations

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO THE STATE DEPARTMENT OF HEALTH IN CLASSIFYING ALL PUBLIC WATER SUPPLY SYSTEMS AND WASTE WATER TREATMENT PLANTS AND CERTIFICATION OF THE OPERATORS.

Regulations of Food Products

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO THE STATE DEPARTMENT FOR LEGISLATION REGULATING THE MANUFACTURE, PRODUCTION, PROCESSING, PACKAGING, STORAGE AND SALE OF FOOD.

Clinical Laboratory Funding

IT WAS MOVED AND CARRIED TO OFFER **GENERAL SUPPORT** TO THE STATE DEPARTMENT OF HEALTH FOR LEGISLATION TO REMOVE THE LIMITATION ON THE FUNDING OF THE CLINICAL LABORATORY LICENSING PROGRAM.

Regulation of Noise Pollution

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO THE STATE DEPARTMENT OF HEALTH PROVIDING FOR THE REGULATION OF NOISE POLLUTION.

Food Standards and Labeling

IT WAS MOVED AND CARRIED TO PROVIDE **GENERAL SUPPORT** TO THE STATE DEPARTMENT OF HEALTH FOR LEGISLATION AUTHORIZING THEM TO ESTABLISH FOOD STANDARDS AND LABELING REQUIREMENTS FOR FOODS IN WHICH OPTIONAL INGEDIENTS ARE PERMITTED.

Birth Control Information

IT WAS MOVED AND CARRIED TO GIVE **GENERAL SUPPORT** TO LEGISLATION ELMINATING PROHIBITIONS AGAINST PREPARING OR DISTRIBUTING BIRTH CONTROL INFORMATION.

Appropriations of State Department of Health

IT WAS MOVED AND CARRIED **TO ENDORSE** THE APPROPRIATIONS OF THE STATE DEPARTMENT OF HEALTH AND THAT THEY SHOULD HAVE ADEQUATE FUNDS TO OPERATE TO THE BENEFIT OF THE CITIZENS OF ARIZONA WHICH THEY ARE REQUIRED BY LAW TO ACCOMPLISH AND THAT ALL NEW PROVISIONS CARRY PROPER APPROPRIATIONS.

Division of Occupational Health

IT WAS MOVED AND CARRIED TO OFFER **ACTIVE SUPPORT** TO THE STATE DEPARTMENT OF HEALTH FOR LEGISLATION TO CREATE A DIVISION OF OCCUPATIONAL HEALTH WITHIN THE STATE DEPARTMENT OF HEALTH.

Consolidation of Health Licensing Boards

IT WAS MOVED AND CARRIED TO **ACTIVELY NONSUPPORT** THE CONSOLIDATION OF HEALTH LICENSING BOARDS WHICH IS BEING PREPARED FOR INTRODUCTION.

BOMEX

Medical Examiners Fund (S.B. 11)

IT WAS MOVED AND CARRIED TO **ACTIVELY NONSUPPORT** SENATE BILL 11 WHICH PROVIDES FOR THE LEGISLATURE TO DETERMINE BY APPROPRIATION HOW MUCH MONEY THE BOARD OF MEDICAL EXAMINERS COULD SPEND.

Reciprocity for Foreign Medical School Graduates

IT WAS MOVED AND CARRIED TO GIVE ACTIVE SUPPORT TO A BILL PREPARED BY MR. JACOBSON PROVIDING ADDITIONAL GROUNDS OF RECIPRICITY FOR GRADUATES OF FOREIGN MEDICAL SCHOOLS.

Additional Proposals by BOMEX

IT WAS MOVED AND CARRIED TO GIVE ACTIVE SUPPORT TO THE FOLLOWING LEGISLATIVE PROPOSALS AS EXPLAINED BY MR. BOYKIN IN BEHALF OF THE BOARD OF MEDICAL EXAMINERS:

1. Change the list of subjects for written examinations due to changing concepts of medical education and utilization of FLEX examinations.
2. Change the grading system for written examinations to allow for a minimum grade of 75% and not less than 50% in any one subject.
3. Changing concepts by professional examination agencies placing a weighted average on clinical competence as opposed to basic and clinical science subjects.
4. Increase the written examination fee to $100 from the present $75 fee.
5. Provide exemption from suit for physicians required to report on conduct and capabilities of confreres.

Meeting adjourned 4:18 p.m.

Richard O. Flynn, M.D.
Chairman

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held Saturday, January 30, 1971, in the offices of the Association, 810 West Bethany Home Road, Phoenix, Arizona, convened at 3:04 p.m., Fred H. Landeen, M.D., President and Chairman, presiding.

MINUTES

Minutes of the meeting held 11/21/70 were approved as distributed.

TRAVELERS INSURANCE

Representatives of The Travelers Insurance Company presented their group malpractice insurance proposal. Extensive discussion ensued. Details of the proposal will be found in the minutes of the 1/31/71 Board of Directors meeting and therefore, are not repeated here.

IT WAS MOVED AND CARRIED THAT THE EXECUTIVE COMMITTEE RECOMMEND ADOPTION OF THIS PROGRAM TO THE BOARD OF DIRECTORS.

PUBLIC RELATIONS PROGRAM

Mr. C. Lamar Owens of Owens & Associates presented an outline of plans for a Public Relations program for the Association.

REPORT RECEIVED.

U. S. PHARMACOPEIAL CONVENTION

The appointment of a delegate to the USP Convention has been asked for and was discussed.

IT WAS RECOMMENDED THAT THE UNIVERSITY OF ARIZONA BE ASKED TO SUGGEST A NAME FOR US TO SUBMIT.

LOBBYIST

Mr. Jacobson reported on his visit with the Board of Directors of the Maricopa County Medical Society on January 12th.

BOARD MEETING 1-31-71

The Executive Committee reviewed the various items on the Board of Directors agenda for January 31, 1971.

Meeting adjourned at 5:32 p.m.

Edward Sattenspiel, M.D.
Secretary

AD HOC FINANCE COMMITTEE

The meeting of the Ad Hoc Finance Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona on Saturday, January 30, 1971, convened at 6:14 p.m., Philip E. Dew, M.D., Treasurer and Chairman, presiding.

MINUTES

Approved the minutes of the meeting held October 3, 1970.

AUTO LEASE

Mr. Robinson again reviewed the auto leasing program worked out with Gold Key Auto Leasing.

IT WAS MOVED AND CARRIED TO RECOMMEND THIS PROGRAM FOR ADOPTION BY THE BOARD OF DIRECTORS.

PROMISSORY NOTES

Mr. Robinson reported that his investigation with legal counsel reveals that it would not be illegal for the Association to issue promissory notes to its members in exchange for cash. It was pointed out that the problems relating to borrowing funds from the membership instead of the bank had many built-in problems that the difference in interest rates would not warrant.

NO ACTION TAKEN.

FISCAL YEAR-CALENDAR YEAR ACCOUNTING

Mr. Robinson reported that in discussing the reason for changing to a calendar year with Dr. Dudley, former treasurer, he stated that the financial report submitted to the House of Delegates when the accounting year was ended on April 1st, were always very distorted in that all of the income for the year appeared and very little of the expenses. Also, the auditing firm was unable to have an accurate audit report ready for the Annual Meeting which is always near the end of April.

For these reasons it was converted to a calendar year, which makes it possible to have a complete audited report to present to the House of Delegates.

REPORT RECEIVED.

BASEMENT COMPLETION COSTS

Mr. Robinson reported that the original estimates of $15 to $20 per square foot for completing the basement were still valid.

NO ACTION TAKEN.

WOMAN'S AUXILIARY

The Woman's Auxiliary's request for an increased allotment from $1,000 to $2,000 was reviewed in-depth. The committee commented upon the excellent and worthwhile programs undertaken by the Auxiliary.

Following extensive discussion, it was felt that due to

the current financial position of the Association, an increase in the allotment at this time is not possible. The committee further suggested that thought should be given to the possibility of increasing the Auxiliary dues, if in fact, that consideration has not already been given.

HAVING OUR OWN PRINTING AND ADDRESSING DEPARTMENT

The various ramifications and expense of having our own printing and addressing department were discussed. It was felt that further study of this matter should be undertaken by Mr. Robinson who would report back to the committee at a later date.

BYLAWS

The resolution written by the Articles of Incorporation and Bylaws Committee to establish this committee as a full standing committee was received for information.

1972 BUDGET

The proposed budget which requires no dues adjustment was extensively reviewed by the Treasurer and it was agreed to present the budget to the House of Dlegates as adjusted in account 600-Depreciation.

Meeting adjourned 11:25 p.m.

Edward Sattenspiel, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

BOARD OF DIRECTORS

Meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, January 31, 1971, a quorum being present, convened at 10:06 a.m., Fred H. Landeen, M.D., President and Chairman presiding.

WELCOME

Dr. Landeen introduced the guests and Robert A. Price, M.D. gave the invocation.

MINUTES

Minutes of the meeting held October 4. 1970, were approved as distributed.

THE TRAVELERS PROFESSIONAL LIABILITY INSURANCE PROGRAM

Mr. Leon Zaccaro, Assistant Secretary and Mr. Lou Tarbell, Second Vice President of the Travelers Insurance Companies reviewed their proposal as is stated in detail later in these minutes.

The gentlemen were excused and the Board deliberated extensively.

It was moved and carried to approve the plan as presented but directing the president and Executive Committee to negotiate the following items:

1. Giving the Association a voice in the selection of defense attorneys.
2. Provision of a five year guaranteed renewability if 67% of the eligible members enroll during the first subscription period.
3. A review of the 20% surcharge for Partner and Corporations.
4. Providing coverage for new physicians who are applying for membership.

At this point Dr. Landeen left the meeting to conduct the negotiations as outlined above.

Dr. Landeen, Mr. Tarbell and Mr. Zaccaro returned to the meeting.

THE FOLLOWING IS THE COMPLETE PRESENTATION INCLUDING THE FINAL STATE OF THE NEGOTIATIONS.

INTRODUCTION

"The Travelers Insurance Companies appreciate the opportunity we have been given by the Arizona Medical Association and the Patzman-Allen-Lamb & Associates, Inc. to participate in the development of a Professional Liability Insurance Program for the doctors that are members of this Association, or who are actively applying for membership.

After an in-depth review of the information made available to us, we conclude that we should prepare for your review a program of insurance for the member doctors of the Arizona Medical Association and new applicants. Such a program is here outlined.

The Travelers' program is fully dependent upon a long term working relationship with ArMA and PAL. Our program, including the portion that pertains to rates, is intended to be fair to all parties. Only through a long term association with full cooperation by all parties can the program be proven. The success of this program is directly related to ArMA's ability to control its membership to the degree that the members purchase their Professional Liability Insurance through this program.

PROFESSIONAL LIABILITY PROGRAM

This program provides insurance to protect the members of ArMA from claims resulting from their activity as a doctor. The operation of an office and the employment of professional and technical help is an integral part of the activity of a doctor, and are, therefore, considered part of this program.

Professional Liability shall include all liability arising out of the performance or the failure to perform any professional service, including service on any duly constituted committee, established by any medical society or hospital staff or pursuant to any law.

Office Premises Liability shall include all bodily injury liability and property damage liability arising out of the ownership, operation, and maintenance of one or more professional offices. The scope of the coverage for both professional liability and office premises liability shall be as defined in the standard Travelers' policy.

EFFECTIVE DATE OF PROGRAM

This program will become effective when 40% of the Association's members have signed applications to place their Professional Liability Insurance with the Travelers upon expiration of their current policy.

MEDICAL REVIEW COMMITTEE

The success of the plan depends a great deal on the medical counsel from the Association's members for underwriting and claim handling. We anticipate that the Association will establish the necessary committees, and we expect to work very closely with them. In the case of claims, we would expect a peer review prior to presentation of the case to any Medical-Legal Panel. We also are depending on the information in ArMA's files, and in the files of the societies of the various counties in Arizona for underwriting the individual doctors.

RATING PLAN

The Rating Program is to be on a prospective rating basis. We expect five major areas of rating to handle the members of the Association. They are as follows:

(A) PREFERRED PLAN — This plan as outlined in Exhibit I should be applicable to approximately 90% of the doctors that meet the preferred underwriting requirements.

(B) NON-STANDARD PLAN — This will be a surcharge plan to apply to those doctors that do not meet the preferred underwriting requirements, yet, should be acceptable at a nominal surcharge. This plan has not been fully developed. We expect and apprcciate the help of ArMA and PAL to develop the levels of surcharge for the doctors in this area. The type of doctor that would fall into this category, by way of example, would be a doctor over 65 years of age who has no record of malpractice incidents. This would warrant a nominal surcharge increasing as his age advanced.

(C) SURCHARGE PLAN — This plan would be for those doctors who do not qualify for (A) and (B) above. An example of what we might classify into this plan would be a doctor who has had a history of irregularities or may have had a malpractice judgment. This plan would contemplate a higher surcharge than indicated in (B) above and would be coupled with deductibles. This plan has not been fully developed and, here again, we would anticipate the aid of ArMA and PAL in developing the appropriate deductible and surcharge.

(D) SURPLUS LINES MARKET — This area would apply to doctors that we find totally unacceptable under the above 3 plans. These would be declined. We anticipate that PAL would do their utmost to place coverage for these doctors with a surplus lines market.

(E) LLOYDS DISCOVERY PERIOD — Those members currently insured in Lloyds are faced with a three year discovery period upon nonrenewal of their current policy. The charge, to provide protection after the Lloyds discovery period ends, will be 50% of the First Years Premium at the desired Limits of Liability.

The rates in Section II are Bureau rates. The rate level we anticipate for the next few years will bear a relationship to Bureau rate indications. In the near future, we bclievcd self-rating of ArMA will be practical, but only at the point where the expected levl of participation is reached and the experience of this program has matured.

LIMITS OF LIABILITY

(a) The Plan has limits of liability as follows:
 (1) $100,000 for each claim with an annual aggregate limit of $300,000;
 (2) An excess layer of $1,000,000 for each claim and annual aggregate over (1) above.

(b) The Plan will permit optional layers of excess limits of liability of $1,000,000 above (a) as can be agreed upon between The Travelers and the individual doctors.

DUTIES AND OBLIGATIONS

The duties and obligations of participants in this contract are as follows:

1. TRAVELERS INSURANCE COMPANY WILL:
 (a) makc available to acceptable doctors a professional liability insurance program at rates determined by The Travelers:
 (b) present semi-monthly to ArMA loss exhibits showing incurred losses split between paid claims, open claims and claim expenses and earned premiums to limits of $100,000 per claim and $300,000 aggregate.
 (c) review the 20% surcharge for Partner of Corporation Liability when the Program becomes self-rating.
 (d) investigate with the proper Department (Claim Department) the possibility of their being open to work with the Association in selecting a firm of Attorneys to handle the Malpractice cases in Arizona.

II. ArMA WILL:
 (a) endorse The Travelers program as the official program of the Association;
 (b) endorse PAL as their representative to arrange this program with Travelers;
 (c) the members will participate according to the following schedule:
 End of First Year — 40% — of Eligible Member Doctors.
 End of Second Year — 60% — of Eligible Member Doctors.
 End of Third Year — 75% — of Eligible Member Doctors.
 End of Fourth Year — 85% — of Eligible Member Doctors.
 When this percentage is reached, The Travelers will guarantee this market to the Association for five (5) years as long as the percentage participation is maintained.
 The Travelers also agree with the Association that if 75% participation is reached in two (2) years, we will give them five (5) years guarantee at that time as long as this level of participation is maintained.
 The Travelers also agrees that if 67% participation is reached during the sign-up period, we will give the Association a five (5) years guarantee at that time.
 (d) promote this program to the Association members as required to meet the participation levels in item (c) above;
 (e) form the necessary committee to aid in underwriting of borderline cases, and to act as a peer review in difficult claim situations;
 (f) encourage continual education of members in their specialty field as well as the medical profession in general;
 (g) continue to educate legislators as to the effect of current and proposed laws upon the medical profession and the general public.

III. PAL WILL:
 (a) market this program aggressively to the end that every Association member is contacted by mail within 90 days and by personal contact within 18 months of the effective date of this program;
 (b) work out with The Travelers the administrative procedures to assure a smooth implementation and operation of this program.

ADMINISTRATION OF THE PLAN

We anticipate a separate unit in our Phoenix, Arizona office to handle this program. This unit will be staffed by career underwriters with sufficient clerical help as needed. This unit will work very closely with PAL, ArMA, Executive Director Bruce E. Robinson, the President of ArMA and all member doctors.

This unit will have the prime responsibilities for all company activities. These activities will consist of:

1. Underwriting – Underwriting of all individual doctors for both acceptability and rating.
2. Policy Writing – Policies will be issued for a term of one year.
3. Premium Payment – All billing will be done through Company/PAL procedures. Premium payment will be due in full on the inception day of the policy.
4. Records – Premiums and claims records will be maintained in such a manner as to permit a semi-annual review of such material with ArMA and PAL.

EXHIBIT I
EXAMPLES OF PHYSICIANS AND SURGEONS MEDICAL MALPRACTICE PREMIUM (per person)

Classification	Premium at 100/300 Limit	Premium for 1,000,000 Over 100/300	TOTAL Program Premium
Physicians—No surgery	$ 437	$175	$ 612
Physicians—Minor surgery or assisting in major surgery on own patients	$ 765	$271	$1,036
Ophthalmologists	$1,656	$584	$2,240
Proctologists	$1,656	$584	$2,240
Cardiac Surgeons	$2,208	$762	$2,970
Otolaryngologists—No plastic surgery	$2,208	$762	$2,970
Surgeons—General (Specialists in general surgery)	$2,208	$762	$2,970
Thoracic Surgeons	$2,208	$762	$2,970
Urologists	$2,208	$762	$2,970
Vascular Surgeons	$2,208	$762	$2,970
Anesthesiologists	$2,759	$841	$3,700
Neurosurgeons	$2,759	$841	$3,700
Obstetricians—Gynecologists	$2,759	$941	$3,700
Orthopedists	$2,759	$941	$3,700
Otolaryngologists—Plastic Surgery	$2,759	$941	$3,700
Plastic Surgeons	$2,759	$941	$3,700
Additional Charges:			
Shock Therapy—by insured physician	$ 437	$175	$ 612
Shock Therapy—by insured surgeon	$ 552	$228	$ 780
X-ray Therapy—by insured physician—Class 1 or 2	$ 437	$175	$ 612
X-ray Therapy—by insured surgeon—Class 3, 4 or 5	$ 552	$228	$ 780
Employed Physicians—Class 1	$ 111	$ 81	$ 192
Employed Physicians—Class 2	$ 191	$105	$ 296
Employed Surgeons—Class 3	$ 414	$184	$ 598
Employed Surgeons—Class 4	$ 552	$228	$ 780
Employed Surgeons—Class 5	$ 590	$273	$ 963"

IT WAS MOVED AND UNANIMOUSLY CARRIED TO ENDORSE THE PROGRAM AS OUTLINED ABOVE.

ArMPAC BOARD OF DIRECTORS

Dr. Langston, who was unable to be present, submitted the following report:

"The Arizona Medical Political Action Committee began this past year with the following as members of its Board of Directors: Dr. Walter Brazie, Dr. Earl Bronson, Jr., Dr. Joseph B. DeLozier, Dr. D. Hansen, Dr. Ray P. Inscore, Mrs. Clare W. Johnson, Dr. John F. Kahle, Dr. Paul W. Kliewer, Dr. Don V. Langston, Mrs. Robert P. Mason, Dr. William W. McKinley, Jr., Dr. William G. Payne, Dr. Eugene A. Savoie, Dr. William B. Steen, Mrs. J. Bruce Tucker, Dr. Sherman W. Thorpe, Mrs. Lewis S. Winter, Dr. Dale F. Webb.

Dr. Don Val Langston was appointed Chairman on the resignation of Dr. John Kahle, who remained on the Board. Mrs. Clare Johnson continued her position as Secretary-Treasurer until January 9th, 1971, when, upon her resignation, she was succeeded by Mrs. Lewis S. Winter. The Board has held three formal meetings during the past years, as well as several informal telephone conferences. This was an election year.

Our membership reached nearly our peak in 1968, a presidential election year, and is considered a success in this off-election year. The Board considered various election candidates and supported both state candidates, as well as candidates for national offices. Overall, 89% of those candidates which we supported were successful. In addition to direct candidate support, several members of the Arizona Medical Political Action Committee were active in candidate's campaigns.

Our treasurer's report was accepted by our Board of Directors and we are in financial balance at the beginning of this year. At the date of this report, plans are still being made for our annual dinner on April 29th, 1971."

REPORT ACCEPTED FOR INFORMATION.

BOARD OF DIRECTORS

Southwestern District Director

IT WAS MOVED AND CARRIED THAT GLEN H. WALKER, M.D., PINAL COUNTY, BE APPOINTED TO REPLACE WILLIAM H. LYLE, M.D., WHO RESIGNED AS SOUTHWESTRN DISTRICT DIRECTOR.

Northeastern District Director

IT WAS MOVED AND CARRIED THAT THOMAS B. JARVIS, M.D., GILA COUNTY, BE APPOINTED TO REPLACE LEO L. LEWIS, M.D., WHO RESIGNED AS NORTHEASTERN DISTRICT DIRECTOR.

A. H. Robins Community Service Award

A SECRET BALLOT ON THE THREE CANDIDATES FOR THIS AWARD WAS TAKEN WITH THE WINNER BEING C. HERBERT FREDELL, M.D., OF FLAGSTAFF.

BOMEX Appointment

THE BOARD RECEIVED FOR INFORMATION THE ADVICE FROM THE GOVERNOR OF THE APPOINTMENT OF WALTER R. EICHER, M.D., TO THE BOARD OF MEDICAL EXAMINERS.

Hospital Advisory Council — Appointment

Following discussion of Louis C. Kossuth M.D.'s letter of 12/29/70 seeking a list of three nominees for appointment to the Hospital Advisory Council of the Arizona State Department of Health, it was determined to seek nominees from Maricopa County Medical Society and Pima County Medical Society.

1971 Dr. Rodman E. Sheen and Thomas G. Sheen Award

Following due deliberation it was determined not to submit a nominee for this award.

State Health Planning Authority

Paul B. Jarrett, M.D. announced that he would be leaving private practice to enter residency training in July 1971, and asked if he should resign from the above named group.

RECEIVED FOR INFORMATION — NO ACTION TAKEN.

EXECUTIVE COMMITTEE

Membership Classification Changes Approved

Maricopa County

a. Louis H. Bos, M.D. — Active to Service — Account V.A. employment — Effective 1/1/71 — Dues $30
b. Wilfred J. Bushard, M.D. — Active to Associate — Account illness — Effective 1/1/71 — Dues Exempt
c. Archie E. Cruthirds, M.D. — Active Over 70 to Fifty Year Club — Effective 1/1/71 — Account Service — Dues Exempt
d. Ben Frissell, M.D. — Active to Associate — Effective 1/1/71 — Account illness — Dues Exempt
e. Murl E. Fulk, M.D. — Active Over 70 to Fifty Year Club — Account Service — Effective 1/1/71 — Dues Exempt
f. Duke R. Gaskins, M.D. — Active to Fifty Year Club — Account Service — Effective 1/1/71 — Dues Exempt

Pima County

a. P. Dake Biddle, M.D. — New member as Associate — Effective 1/1/71 — Account Retired — Dues Exempt
b. Franc Brodar, M.D. — New member as Associate — Effective 11/11/71 — Account residency — Dues Exempt
c. Louis A. Brunsting, Sr., M.D. — Active to Active Over 70 — Effective 1/1/71 — Account Age — Dues Exempt
d. John P. Craven, M.D. — New member as Associate — — Effective 1/1/71 — Account retired — Dues Exempt
e. Robert I. Cutts, M.D. — Active to Service — Effective 1/1/71 — Account V.A. employment — Dues $30
f. Howard W. Gadd, M.D. — Active to Associate — Effective 1/1/71 — Account illness — Dues Exempt
g. Melvin Halpern, M.D. — Active to Associate — Effective 1/1/71 — Account illness — Dues Exempt
h. Carl A. Johnson, M.D. — Active Over 70 to Associate — Effective 1/1/71 — Account Retirement — Dues Exempt
i. Harold W. Kohl, Sr., M.D. — Active to Active Over 70 — Effective 1/1/71 — Account Age — Dues Exempt
j. Elbert Munger, M.D. — Active Over 70 to Associate — Effective 1/1/71 — Account illness — Dues Exempt

Financial Statement for period ending 12/31/70

Dr. Dew reviewed the financial statement for the period ending 12/31/70 and pointed out that it was an unaudited statement. He also noted that the Association's books were currently undergoing the annual audit by Henry & Horne, Certified Public Accountants, and a report would be forthcoming for the next Board meeting.

REPORT RECEIVED.

ARTICLES OF INCORPORATION & BYLAWS COMMITTEE

Dr. Henderson, Chairman, reviewed resolutions A-1-71 through A-7-71 (these numbers are for identification for this Board meeting only and the numbers will likely be different when presented to the House of Delegates) for the Board. He pointed out that research has indicated Resolution A-6-71 is not necessary as relettering bylaw paragraphs can be done without House of Delegate action.

Resolution A-1-71

Subject — Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chaper VII — Standing and Special Committees — Section 4 (c) be added to read:

(C) FINANCE: — THE COMMITTEE SHALL CONSIST OF THE TREASURER AS CHAIRMAN AND AT LEAST THREE MEMBERS. THE COMMITTEE SHALL ACT IN AN ADVISORY CAPACITY IN BUDGETARY AND FINANCIAL MATTERS.

Resolution 3-2-71

Subject — Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing Committees, Section 4 (f) be deleted:

[(f)Industrial Relations: — This committee shall consist of at least five members, appointed on a geographic basis and with due consideration for the specialties and general practice. The committee shall represent the membership of the Association in medical relations under workman's compensation.]

Resolution A-3-71

Subject — Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (h) Medical Economics: be amended to read:

(h) Medical Economics: — This Committee shall consist of A CHAIRMAN AND at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with [all] matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlarged as necessary.

The purview of this committee shall include:

(1) Governmental Contracts; EXCEPT THOSE MATTERS DEALING WITH WORKMEN'S COMPENSATION;
(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;
(3) Organized Welfare and Charity Work;

(4) Retirement and Investments, including Group Investments for members.

Resolution A-4-71

Subject — Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendments

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) be added to read:

(I) OCCUPATIONAL HEALTH: — THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST FIVE MEMBERS APPOINTED ON A GEOGRAPHIC BASIS AND WITH DUE CONSIDERATION FOR THE SPECIALTIES AND FAMILY PRACTICE. THE COMMITTEE SHALL REPRESENT THE ASSOCIATION ON ALL QUESTIONS RELATING TO MEDICAL AND ECONOMIC RELATIONS UNDER WORKMEN'S COMPENSATION.

IT SHALL ALSO CONCERN ITSELF WITH THE MAINTENANCE OF GOOD OCCUPATIONAL HEALTH PRACTICES AND IMPROVEMENT IN INDUSTRIAL SAFETY.

Resolution A-5-71

Subject — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) Professional:—be amended to read:

[(i)] (J) Professional: — This committee shall consist of a chairman and at least ten members. A chairman shall be appointed annually from among the members who have served for at least three years on the committee.

The committee will be responsible for all professional aspects of medicine, other than the economic and legislative areas, and comprise sections on Aging and General medicine (cancer, diabetes, arthritis, alcoholism, deafness, visually handicapped, blood and nursing homes); Allied medical groups (allied and paramedical profesisons and groups); Athletic medicine; Disaster medicine; DRUG ABUSE; Emergency Care; **[Industrial health (Rehabilitation);]** Medical education (at all levels, and The Arizona College of Medicine); Medicine and religion; Mental health; Perinatal and Maternal mortality; Poison control; Public health (Maternal and child health, water and air pollution, nursing homes and veneral disease); REHABILITATION MEDICINE; Safety and such other sections as may be indicated from time to time. It shall interest itself in medicolegal problems. Further, an advisor to the Woman's Auxiliary of ArMA shall be designated (to be chosen from the same geographic area of the state as the current President of the Woman's Auxiliary).

Each committee member, except the chairman, shall serve as chairman of a section for a particular activity. The chairman may also serve as the chairman of a section. The section chairman shall be appointed by the President of the Association, with advice of the chairman of the Profcssional Committee.

Resolution A-6-71

Subject — Chapter VII — Standing & Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment

RESOLVED, That Chapter VII — Standing Committees. Section 4 (c) (d) (e) (g) (h) (i) (j) (k) (l) paragraph identification titles be amended to read as follows:

[(c)] Governmental Services:—
(D) Governmental Services:—
[(d)] Grievance:—
(E) Grievance:—
[(e)] History & Obituary:—
(F) History & Obituary:—
[(j)] Public Relations:—
(K) Public Relations:—
[(k)] Publishing:—
(L) Publishing:—
[(l)] Scientific Assembly:—
(M) Scientific Assembly:—

Resolution A-7-71

Subject — Chapter IV — Officers. Section 7. Treasurer — Amendment

RESOLVED, That Chapter IV — Officers. Section 7. Treasurer be amended to read:

The Treasurer is the chief financial officer of the Association AND CHAIRMAN OF THE FINANCE COMMITTEE. Aside from such specific duties as may be otherwise herein provided, **[he shall aid the Board in the preparation of the annual budget]** HE SHALL PREPARE THE ANNUAL BUDGET WITH THE ASSISTANCE OF THE FINANCE COMMITTEE, receive and hold all funds of the Association, and disperse the same upon proper authorization and approval.

He shall order an annual certified audit of the accounts of the Association by a Certified Public Accountant of good repute, and shall have authority to pay out of the funds of the Association to the Certified Public Accountant for services rendered. This audit shall serve as a basis for an annual report to the Board and to the House of his expenditures and the state of the funds in his hands.

IT WAS MOVED AND CARRIED THAT RESOLUTIONS A-1-71 THROUGH A-5-71 AND RESOLUTION A-7-71 BE ADOPTED AND INTRODUCED BY THE BOARD OF DIRECTORS TO THE HOUSE OF DELEGATES.

BENEVOLENT & LOAN FUND COMMITTEE

Dr. Daniel Cloud reported that the committee had granted seven $500 scholarships to the below listed students at the committee's August 8, 1970 meeting.

(1) Eide, Eugenia E. — University of Arizona
(2) Hagen, Nick S. — University of Arizona
(3) James, Terry L. — University of Arizona
(4) Keserauskis, Patricia L. — University of Arizona
(5) McEachern, Larry E. — University of Arizona
(6) Vovakes, Michael J. — Johns Hopkins
(7) Wong, Alan L. — University of Arizona

CONTINUING MEDICAL EDUCATION, AD HOC COMMITTEE ON

Resolutions A-8-71 through A-12-71 (These numbers

are for identification purposes for the Board only and the numbers may be changed before they are presented to the House of Delegates) were reviewed in-depth by the Board at which there were many divergent opinions expressed concerning Resolution A-8-71. It was pointed out that Resolutions A-9-71 through A-12-71 simply amended the Bylaws so as to reflect the intent of A-8-71 which is the key Resolution dealing with Continuing Medical Education Requirements for ArMA members.

Resolution A-8-71

Subject — Continuing Medical Education Requirements.

WHEREAS, The House of Delegates of the Arizona Medical Association, by adoption of substitute Resolution 5-70, has recognized that demonstrated participation by physicians in continuing education is becoming an expected part of the ongoing qualifications of physicians to practice their profession; and

WHEREAS, The House of Delegates of the Arizona Medical Association, by adoption of substitute Resolution 5-70, has stated that membership in the Arizona Medical Association should assure the public of physicians who continue to maintain their competency through continuing medical education; and

WHEREAS, The Ad Hoc Committee on Continuing Medical Education has been requested to prepare amendments to the bylaws providing for a Standing Committee on Continuing Medical Education; and

WHEREAS, The Ad Hoc Committee on Continuing Medical Edueation, as instructed by the House of Delegates through substitute Resolution 5-70, has extensively considered requirements for continuing medical education which are to be a **requisite** for continuing membership in the Arizona Medical Association; therefore, be it

RESOLVED, That each member of the Arizona Medical Association complete a minimum TOTAL of 150 credit hours of continuing medical education earned over a continuous three year qualifying period, and be required to submit a report of those educational activities to the Medical Education Committee of the Arizona Medical Association every three years. A credit hour is on the basis of one hour of participation in a continuing medical education activity. A minimum of sixty credit hours must be obtained from any combination of **Required Education** categories (Categories 1 through 6.) The remaining ninety credit hours may be acquired from any combination of **Elective Education** categories (Categories 7 through 10.)

REQUIRED EDUCATION

Category 1. Internship — Residency (or Fellowship).

An AMA approved internship, residency, or fellowship is credited at fifty credit hours per year for full-time training.

Category 2. Education for an Advanced Degree.

Education leading to an advanced degree may be used for credit if the degree is in a medical field or a medically-related science such as medical care administration, legal medicine or immunology. Fifty credit hours are allowed for each full academic year of study within the qualifying period.

Category 3. Research in Lieu of Training.

Credit for medical research is given only for full-time medical research. Fifty credit hours are allowed for each full year of research.

Category 4. Continuing Medical Education Courses.

a. All courses produced by an AMA accredited institution, and until all institutions have had an opportunity to become accredited, courses offered by any organization or institution listed as a course sponsor or co-sponsor in "Continuing Education Courses for Physicians," Journal of American Medical Association, are creditable.
b. Medical School or Postgraduate Medical School Courses.
c. Annual AMA and ArMA Scientific Medical Meetings. (Only attendance at scientific sessions is creditable.)
d. National, Regional and State Scientific Medical Meetings of Specialty Societies and courses originated and directly presented by said Societies.
e. Individual ArMA approved courses or meetings.
f. Other ArMA approved education activities; e.g., sabbatical leave, postgraduate traineeship.

Category 5. Teaching.

One credit hour is allowed for each "clock" hour of teaching medical students or physicians. Maximum credit of 30 hours is allowable for a qualifying period.

An additional 60 credit hours may be claimed as elective hours in Category 10 (additional teaching).

Category 6. Papers or Publications.

Ten credit hours may be claimed for each scientific paper or publication. A paper must be presented to a medieal society or an organization whose membership is restricted to physieians. A publication must appear in a recognized medical or medically related scientific journal. Scientific papers must have been presented or have been published during the qualifying period.

ELECTIVE EDUCATION

The remaining ninety credit hours needed to maintain membership in the Arizona Medical Association may be acquired from any combination of Elective Education Category (eategories 7 through 10).

Category 7. Scientific Medical Meetings — Local.

A limit of fifty credit hours per qualifying period may be obtained in attending local scientific meetings such as hospital staff conferences, lectures, seminars, and local professional society meetings.

Category 8. Other Educational Activities.

Educational activities approved in advance may be used with a fifty hour credit limit.

Category 9. Scientifie Exhibits.

Ten credit hours are allowed for preparing and personally presenting a scientific exhibit at a professional meeting of a medical society or a medical specialty society.

Category 10. Additional Teaching.

Sixty credit hours may be claimed for teaching in this category in addition to the thirty credit hour limit in Category 5. The requirements for credit are the same as for Category 5.

and be it further

RESOLVED, That all active members of the Arizona Arizona Medical Association as of July 1, 1971 must submit their initial report of continuing medical education activities to the Medical Education Committee no later than June 30, 1974 and every three years thereafter in order to maintain their active membership. Required reports of continuing medical education activities may be submitted to the Medical Education Committee for validation beginning July 1, 1972 and every three years thereafter by members of the Association if they so desire; and be it further

RESOLVED, That new active members of the Arizona Medical Association subsequent to July 1, 1971 will be given a qualifying period of three years from July 1, of the year their active membership commenced, to fulfill the requirements of continuing medical education; and be it further

RESOLVED, That consideration be given those members who receive reasonably equivalent awards and/or certificates of continuing medical education from the American Medical Association or recognized national professional societies, as satisfying the requirements for continuing medical education of the Arizona Medical Association; and be it further

RESOLVED, That the Medical Education Committee will report annually to the Board of Directors of the Arizona Medical Association names of those members who have submitted acceptable reports of three years of continuing medical education activities. Those members will then be sent appropriate certificates of commendation by the Board of Directors; and be it further

RESOLVED, That the Medical Education Committee will report annually to the Grievance Committee those members who have failed to submit a report of continuing medical education activities as required, or who have submitted an unsatisfactory report. The Grievance Committee shall serve as an Appeal Board in these matters and make recommendations to the Board of Directors that:

(a) There is suffieient reason for a member not to participate in the Continuing Medical Education Program for reasons of ill health, handicap, temporary absence from practice, or other extenuating circumstances,

(b) The report submitted is satisfactory and acceptable or

(c) A member be suspended or expelled according to the procedure outlined in Chapter VII, section 4, (d).

Resolution A-9-71

Subject — Chapter VII — Standing and Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendments

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) be added to read: (I) MEDICAL EDUCATION: — THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST EIGHT MEMBERS, APPOINTED WITH DUE CONSIDERATION FOR THE SPECIALTIES AND FAMILY PRACTICE. A CHAIRMAN SHALL BE APPOINTED ANNUALLY FROM AMONG THE MEMBERS WHO HAVE SERVED FOR AT LEAST THREE YEARS ON THE COMMITTEE. THE COMMITTEE SHALL REPRESENT THE ASSOCIATION ON ALL QUESTIONS RELATING TO MEDICAL EDUCATION AND RECOMMEND FOR CERTIFICATION TO THE BOARD OF DIRECTORS THOSE MEMBERS WHO HAVE COMPLETED THE MEDICAL EDUCATION REQUIREMENTS FOR CONTINUING MEMBERSHIP AS SET FORTH IN CHAPTER II, SECTION 3 (A), (5).

Resolution A-10-71

Subject — Chapter II — Membership — Section 3. Class of Membership — (A) Active Members — Amendments

RESOLVED, That Chapter II — Membership — Section 3. Class of Membership — (A) Active Members — Amendments, be amended to read:

All active members of all the county soeieties shall be active members of this Association. The minimum qualifications for active membership in a county society shall be that the individual must (1) hold the degree of Doctor of Medicine or its equivalent, (2) be an American citizen, or have made application for American citizenship papers (in which casc, he must make reasonable progress toward full citizenship or his membership shall lapse), (3) hold an unrevoked lieensc to praetice medicine and surgery in the State of Arizona, and (4) be a legal resident of the State of Arizona, (5) FULFILL THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter II, Section 4), cach county society shall be the exclusive judge of the qualifications of its members. Rights. An active member shall have all the rights and privileges of the Association as herein provided.

Resolution A-11-71

Subject — Chapter II — Section 4. Loss of Membership (A), (B) — Amendments

RESOLVED, That Chapter II — Section 4. Loss of Membership (A) — Amendments, be amended to read:

(A) Active, Associate or Fifty-Year Club membership in this Association shall be lost by:

(i) Final expulsion from the county society through whieh he is an active member of the Association.

(ii) Transfer of membership to a county society of another state, and thereby to another state Association, exccpt as provided in Chapter III, Section 3.

(iii) Voluntary resignation, which shall be without prejudice.

(iv) Aetion of the House of Delegates (sce Chapter VI, Section 6; Chapter VIII, Section 9).

(v) Revocation of the member's license to practice in Arizona. This latter clause

shall effect immediate loss of membership as of the date of revocation.

(vi) Failure to maintain membership in good standing in the American Medical Association.

(vii) Failure to pay Association dues and assessments within one year of the date such become payable, unless such failure be exempted under Chapter IX, Section 5.

(viii) FOR ACTIVE MEMBERSHIP, FAILURE TO FULFILL THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION ELSEWHERE IN THE BYLAWS.

(B) Active, Associate or Fifty-Year Club membermembership in this Association shall be suspended by:

(i) Suspension of membership in the county society through which he is an active member of this Association.

(ii) Action of the Board (see Chapter VI, Section 6).

(iii) Suspension of membership in the American Medical Association, or

(iv) Failure to pay the annual dues and assessments before the delinquency date.

(v) FOR ACTIVE MEMBERSHIP, FAILURE TO SUBMIT SATISFACTORY REPORTS SHOWING COMPLIANCE WITH THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION.

All of the rights and privileges of membership shall be withheld during the period of suspension of membership.

Resolution A-12-71

Subject — Chapter VII — Standing and Special Committees — Section 4. Composition and Duties of Standing Committees: — Amendment.

RESOLVED, That Chapter VII — Standing and Speeial Committees — Seetion 4 (i) Professional: — be amended to read:

(i) Professional: — This committee shall consist of a chairman and at least ten members. A chairman shall be appointed annually from among the members who have served for at least three years on the committee.

The committee will be responsible for all professional aspects of medicine, other than the economic and legislative areas, and eomprise sections on Aging and General medicine (eancer, diabetes, arthritis, alcoholism, deafness, visually handieapped, blood and nursing homes); Allied medieal groups (allied and paramedieal professions and groups); Athletic medicine; Disaster medicine; Emergency Care; Industrial health (Rehabilitation); [**Medical education** (at all levels, **and The Arizona College of Medicine**)]; Medicine and religion; Mental health; Perinatal and Maternal mortality; Poison control; Public health (Maternal and child health, water and air pollution, nursing homes and venereal disease); Safety and such other sections as may be indicated from time to time. It shall interest itself in medicolegal problems. Further, an advisor to the Woman's Auxiliary of ArMA shall be designated (to be chosen from the same geographic area of the state as the current Preside nt of the Woman's Auxiliary).

Each committee members, except the chairman, shall serve as chairman of a section for a particular activity. The chairman may also serve as the chairman of a section. The section chairman shall be appointed by the President of the Association, with advice of the chairman of the Professional Committee.

IT WAS MOVED AND CARRIED THAT RESOLUTION A-8-71 THROUGH A-12-71 BE ADOPTED AND THAT THEY BE INTRODUCED BY THE BOARD OF DIRECTORS TO THE HOUSE OF DELEGATES.

Budget for 1971

IT WAS MOVED AND CARRIED THAT A BUDGET OF $1,000, IN ADDITION TO THE TV BUDGET OF $1,300, BE ALLOCATED TO THIS COMMITTEE FOR 1971.

FINANCE COMMITTEE, AD HOC

Auto Leasing Program

Dr. Dew outlined the Auto Leasing Program approved by the Finance Committee as a new service for ArMA members.

IT WAS MOVED AND CARRIED TO APPROVE THE NEW AUTO LEASING PROGRAM FOR THE MEMBERSHIP.

Budget for 1971

IT WAS MOVED AND CARRIED THAT A BUDGET OF $200 BE ALLOCATED TO THIS COMMITTEE FOR 1971.

GOVERNMENTAL SERVICES COMMITTEE

Utilization Review: A Position Paper

The Board considered the position on Utilization Review as recommended by the Governmental Services Committee as follows:

UTILIZATION REVIEW: A POSITION PAPER

The Board of Directors and the House of Delegates have formally adopted as a major objective the use of all possible resources to increase the effectiveness of peer review (including utilization review) at all levels. With particular reference to hospitals and extended eare facilities, we feel it necessary to state the appropriate role of utilization review and the settings in which it must function. In spite of our previous and eontinuing efforts in peer review, such a statement is now necessary because we recognize that these efforts are now being subjected to new and potentially destructive kinds of pressures from outside the profession. Consequently, in terms of future utilization review activities, ArMA will base its policy deeisions and actions on the following professional bases.

1. Quality control is our prime objective and eannot be allowed to become secondary to cost control. As we neeessarily become more and more concerned with monetary savings, we must seek guarantees that quality and appropriateness of care do not suffer in the process.
2. Our efforts must be geared to the primary objec-

tive of the provision of adequate and appropriate patient care, rather than to the administrative requirements of government programs. We must never lose sight of the fact that our commitment, organizationally and individually, is to all of our patients. Any worthwhile peer review system will apply equally to the patient public at large as well as to those patients who are recipients of government assistance.

3. We must assure that when we enter into agreements with government regarding peer review, the basis for such agreements is solidly founded on the concept of a true partnership – a meaningful relationship which recognizes the importance of professional guidance and competence. Government officials cannot expect physicians to continue their efforts in helping government programs to succeed, if they are unwilling to fund such programs realistically or to consult with the medical profession before implementing restrictive regulations.
4. We will continue to encourage the development of various appropriate and innovative systems on the local level to implement the concept of utilization review which meets the objectives of both quality and cost control simultaneously without diluting our effectiveness in our area of major responsibility – quality.
5. We emphasize again that the discussions regarding review mechanisms must represent the product of sharing among fiscal intermediaries, state agencies, state and county societies and physicians. All must be in a position to place issues and questions before an open forum and to arrive at mutually acceptable approaches if such programs are to serve in the best interest of our patients.

IT WAS MOVED AND CARRIED THAT THE ABOVE POSITION PAPER BE ADOPTED AS THE POSITION OF THIS ASSOCIATION.

Compensation of Utilization Review Section Members

IT WAS MOVED AND CARRIED THAT THE MEMBERS OF THE SECTION ON UTILIZATION REVIEW OF THE GOVERNMENTAL SERVICES COMMITTEE BE COMPENSATED BY THE APPROPRIATE AGENCY WHEN INVOLVED IN A SPECIFIC CASE AND/OR CLAIM REVIEW AT THE RATE OF $50 PER HOUR PLUS 12c A MILE TRAVEL.

Compensation of Section on Medical Review Members

Mr. J. J. Blazek's letter of October 23, 1970, stating that Aetna cannot compensate nor provide legal defense to members of the Section on Medical Review was:

RECEIVED FOR INFORMATION.

Physicians Medical Treatment Plan and Certification – Home Health Services Form

IT WAS MOVED AND CARRIED THAT ENDORSEMENT BE GIVEN TO THE ABOVE LISTED FORM AS REQUESTED BY ARIZONA BLUE CROSS-BLUE SHIELD.

LEGISLATIVE COMMITTEE

Dr. Flynn reviewed the actions taken by the Legislative Committee on January 24, 1971 with regard to the fifty-one bills or proposed bills relating to health. (A copy of the nine page report is available upon request.)

IT WAS MOVED AND CARRIED TO APPROVE THE ACTIONS OF THE LEGISLATIVE COMMITTEE WITH THE FOLLOWING CHANGES: **HOSPITAL RATE CONTROL BILL H.B. 18** – CHANGE "NO ACTION" TO "NONSUPPORT." **HOSPITAL AUDIT BILL H.B. 24** – CHANGE "NO ACTION" TO "NONSUPPORT." **BLOOD ALCOHOL BILL S.B. 67** – CHANGE "TO RECEIVE" TO "GENERAL SUPPORT."

LOCUM TENNENS & HEALTH MANPOWER, AD HOC COMMITTEE ON

Physician's Assistants

The committee's recommendation regarding approval of a proposed physician's assistants legislative bill and proposed regulations were reviewed.

It was noted that action was taken earlier, during the action on legislative matters, regarding the proposed bill.

Dr. Schaller expressed the opinion that the proposed legislation and regulations were too narrow and might not cover such categories as ambulance drivers. Drs. Flynn and Schaller were to review the matter and report back.

OCCUPATIONAL HEALTH, AD HOC COMMITTEE ON

The Board confirmed the appointment of George L. Cannon, M.D. as a member of this committee.

PROFESSIONAL COMMITTEE

Heart Association Program Endorsement

IT WAS MOVED AND CARRIED THAT THE BOARD APPROVE THE PROFESSIONAL COMMITTEE'S RECOMMENDATION WHICH READS AS FOLLOWS:

1. THAT IF ANY CARDIAC ABNORMALITY IS DETERMINED TO BE PRESENT, BY THE SCREENING PROGRAM, AN IMMEDIATE REFERRAL BE MADE TO THE CHILD'S PRIVATE PHYSICIAN.
2. THAT A LETTER (OR NOTICE) BE SENT TO THE PARENTS WHERE SCREENING IS TO BE DONE INFORMING THEM AS TO THE NATURE OF THIS TEST, ITS PURPOSES, AND THE PROCEDURE TO BE FOLLOWED IF AN ABNORMALITY IS DISCOVERED: NAMELY REFERRAL TO THE CHILD'S PRIVATE PHYSICIAN.
3. ONLY IF A CHILD DOES NOT HAVE A PRIVATE PHYSICIAN SHOULD REFERRAL BE MADE TO COUNTY HEALTH OR OTHER RESOURCE.

Physician's Assistant Position Paper

Dr. Wagner, Chairman of the Professional Committee reviewed the position paper on Physician's Assistants as prepared for the committee by Dr. Schaller. (Copy available upon request.)

IT WAS MOVED AND CARRIED TO ADOPT THE POSITION PAPER MENTIONED ABOVE AS THE POSITION OF THE ASSOCIATION ON THIS MATTER.

AMA DELEGATE'S REPORT

Dr. Cloud reviewed the activities of the AMA at the

Clinical Meeting recently held in Boston. A copy of those proceedings are available at the Association offices.

Dr. Cloud also explored, with the Board, the possibility of inviting the AMA to conduct the clinical meeting in Phoenix in 1977 or after.

IT WAS MOVED AND CARRIED TO INVESTIGATE FURTHER THE REQUIREMENTS OF THE AMA AND REPORT BACK.

COMMUNICATIONS

The Board received, with thanks, the letter from the staff expressing appreciation for the Christmas bonus.

OTHER BUSINESS

AAGP Resolution

The resolution submitted to ArMA by AAGP relating to the establishment of a Department of Family Practice at the University of Arizona College of Medicine was reviewed in-depth.

IT WAS MOVED AND CARRIED THAT DR. SCHALLER WAS TO BE ASKED TO PREPARE A RESOLUTION ALONG THE LINES OF THAT SUBMITTED BY THE AAGP FOR CONSIDERATION OF THE BOARD AT ITS MARCH MEETING.

Steering Committee for a Statewide Master Planning Group for Nursing in Arizona

A request from the Arizona State Board of Nursing for a representative from ArMA to the above listed group was reviewed. It was recommended that William G. Payne, M.D. be asked to serve on this steering committee.

Malpractice Bills

Dr. Jarrett requested that copies of all legislation relating to malpractice insurance be forwarded to the Arizona State Planning Authority.

Meeting adjourned at 4:40 p.m.

Edward Sattenspiel, M.D.
Secretary

FORTY-FIRST ANNUAL MEETING

PRE-RESERVATION

Woman's Auxiliary to the
Arizona Medical Association
April 27, 28, 29 and 30
Safari Hotel, Scottsdale

Mrs. Louis H. Bos
443 W. Cheery Lynn Rd.
Phoenix, Arizona
85013

Dear Mrs. Bos:

I plan to attend the 41st Annual Meeting. Please count me in for the following:

Thursday, April 29th, 1971
Luncheon and Tour at Royal Palm Inn
($4.00)

Friday, April 30th, 1971
Luncheon — Paradise Valley Country Club
($4.00)

Please mail pre-reservations by April 23, 1971, and be sure to REGISTER for the meeting in the Lobby of the Convention Center to receive your free gifts.

U. S. — MEXICO BORDER HEALTH ASSOCIATION

The annual U.S. - Mexico Border Health Association conference being held this year in Tucson, Arizona will take place March 29 through April 3. The conference serves as an occasion for health officials of both the U. S. and Mexico to meet and discuss problems that are endemic to both countries along the 1,600 mile frontier.

This International cooperation is fostered by the Pan American Health Organization and the World Health Organization. It is interesting to note that there are 14 paired cities along the U. S. - Mexico border and the health of over three million people living in them is shared with equal concern by both countries. In addition, well over one hundred million border crossing are made annually by both Mexicans and Americans.

Created in 1942 the U. S. - Mexico Border Health Association has worked on many problems such as, sanitation, water supply and control, mosquito control, venereal diseases, innoculations and a host of other health essentials. Physicians, nurses, sanitarians, social workers, hospitals and untold numbers of health specialists devote many hours to their work in assuring the continued health of our border dwelling citizens. This years' conference will feature many health subjects and the list is long, for example, prenatal & child health, diptheria, dysentery, parasitic disease, tuberculosis, cholera, are but a few examples of the plenary and preventative medicine sessions that will be held.

Future Medical Meetings

REFRESHER COURSE IN PSYCHIATRY IN MEDICAL PRACTICE

SPONSORED BY:
USC School of Medicine

SCHEDULED:
7:00 to 9:00 p.m. each Tuesday evening from January 12, 1971 through March 30, 1971 (twelve weeks).

PLACE:
Medical Library of Camelback Hospital
5055 North 34th Street, Phoenix

COST:
$35

APPLICATION FORMS:
May be obtained by writing to:
Division of Post-Graduate Psychiatry
USC School of Medicine
2025 Zonal Avenue
Los Angeles, California 90033
The size of the class will be limited; therefore, it is suggested that applications be made as early as possible.

ACCREDITATION:
AAGP

INSTRUCTORS:
Richard E. H. Duisberg, M.D.
Howard S. Gray, M.D.

FORMAT OF COURSE:
As in previous years, didactic lectures, live interviews and seminar discussions will be used.

TOPICS:
Flexible — will include interviewing techniques, exploration of emotional aspects of general medical cases, dynamic formulations, diagnosis, patient management.

THE 24TH NATIONAL CONFERENCE OF RURAL HEALTH

March 25-26, 1971

ATLANTA MARRIOT MOTOR HOTEL
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No Registration Fee

For information write:
Council on Rural Health
American Medical Association
535 North Dearborn
Chicago, Illinois 60610
Attn: Bond L. Bible, Ph.D.

THE TWENTY-THIRD ANNUAL MEETING OF SOUTHWESTERN SURGICAL CONGRESS

April 19 - 22, 1971

CAESARS PALACE
Las Vegas, Nevada

For information write:
The Southwestern Surgical Congress
Central Office
301 Pasteur Building
Oklahoma City, Oklahoma 73103

"Information and Communication In Medicine"

A Seminar will be presented at the

University of Arizona
College of Medicine
Tucson, Arizona

April 23-24, 1971

SPEAKERS

Franz Ingelfinger, M.D. — Editor, New England Journal of Medicine

Louise Darling — Chief Librarian, UCLA Biomedical Library

Joseph Stokes III, M.D. — Chairman, Department of Community Medicine, University of California, at San Diego.

A number of exhibits and demonstrations relted to information and communication techniques will accompany the Seminar.

FOURTEENTH CANCER SEMINAR

Sponsored by:
AMERICAN CANCER SOCIETY, ARIZONA DIVISION, INC.

April 16, 1971
9:00 A.M. to 5:30 P.M.

University of Arizona, College of Medicine

Registration Fee: $10 (including luncheon)

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Bernard Fisher, M.D. — University of Pittsburgh
Paul Scanlon, M.D. — Mayo Clinic
John A. Bruner, M.D. — Phoenix
M. W. Heine, M.D. — University of Arizona

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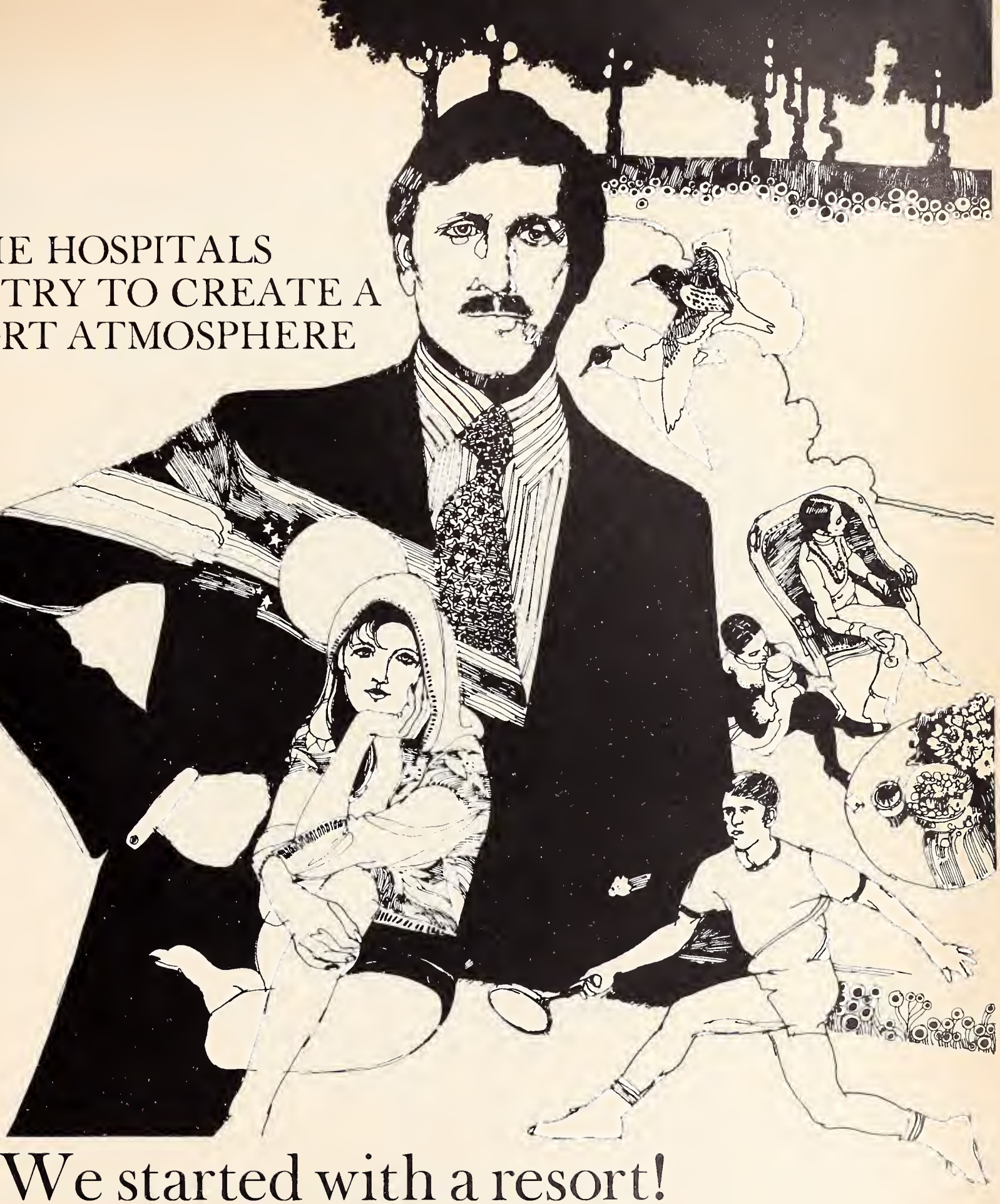
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TO THOSE NOW ENROLLING

The Hospital-Surgical plan now being issued by the Company has a surgical schedule based on the Relative Value method. At the present time, we are offering the policyowners a choice of either $5.00 per Factor or $7.50 per Factor.

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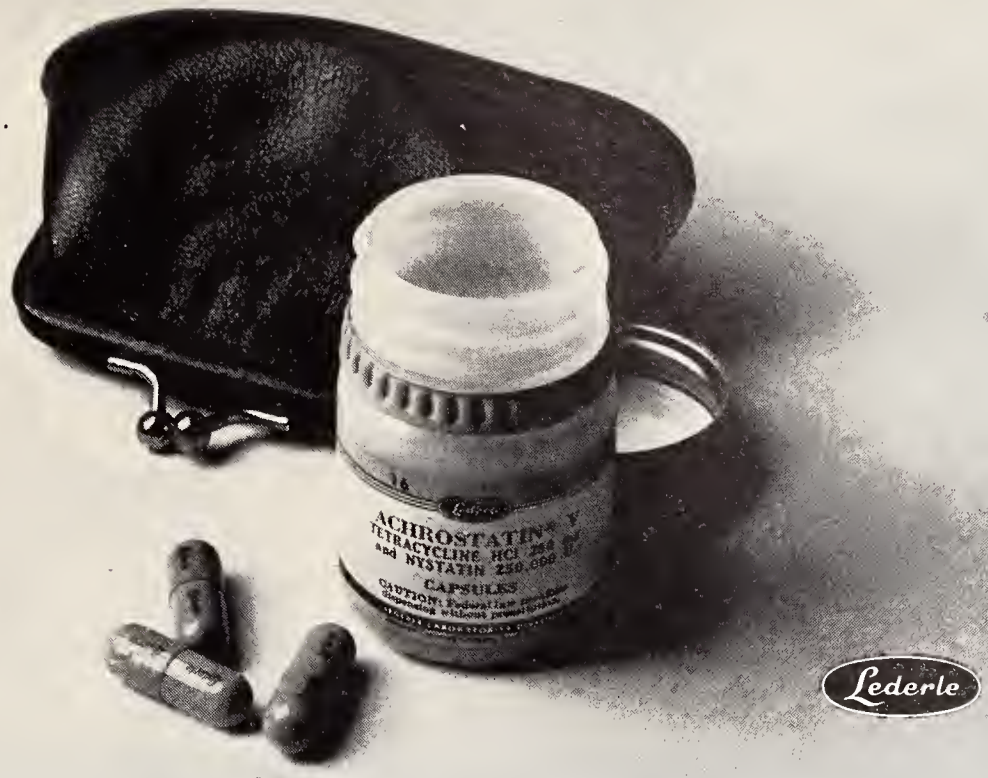
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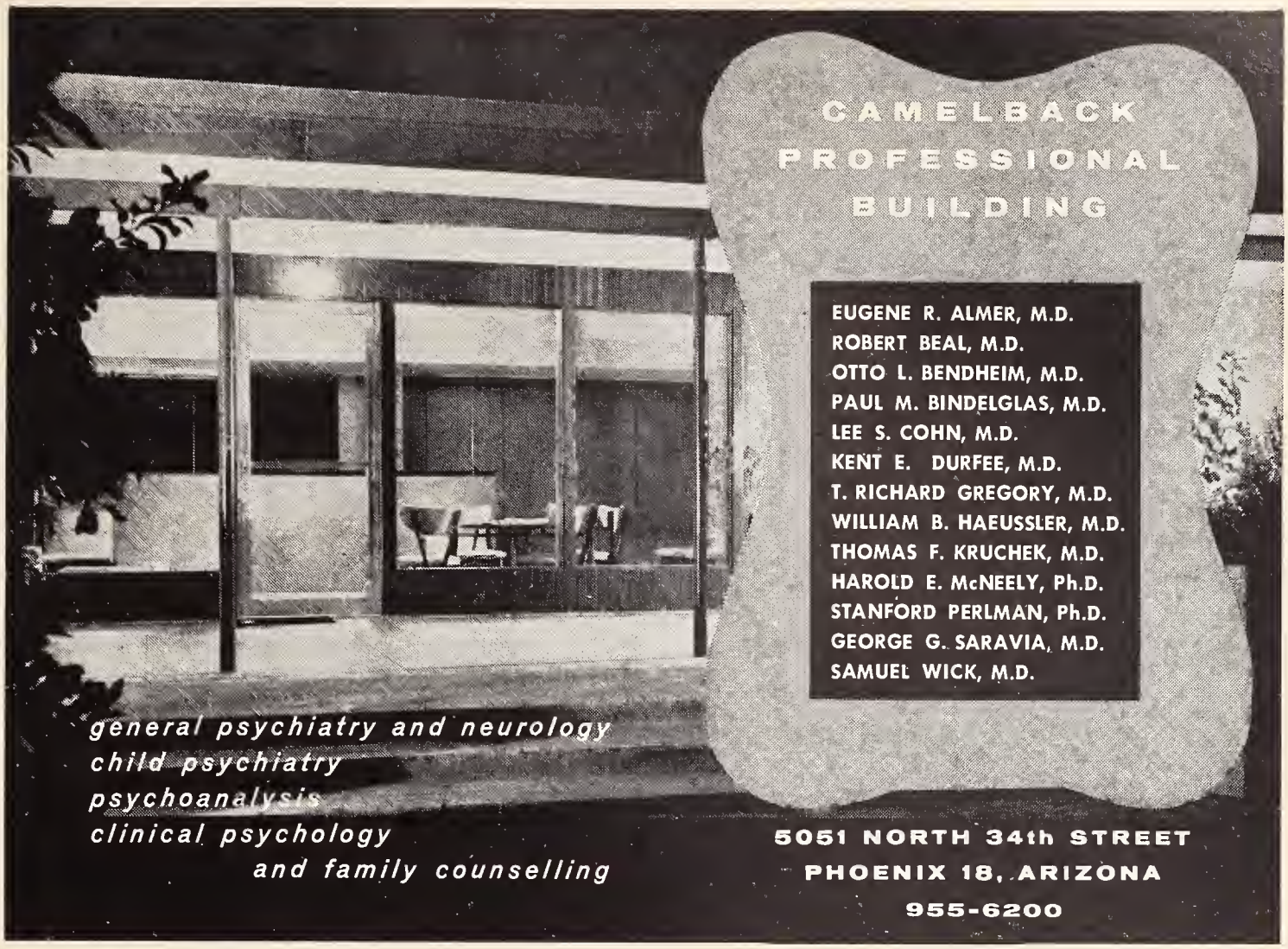
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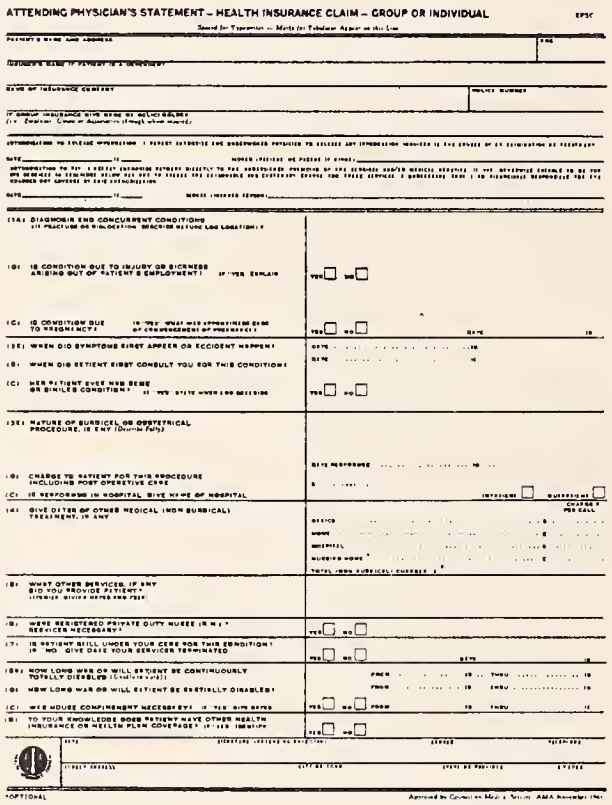
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DATE _____ 19__ SIGNED (INSURED PERSON) _____

(1A) DIAGNOSIS AND CONCURRENT CONDITIONS (IF FRACTURE OR DISLOCATION, SPECIFY WHETHER CLOSED OR OPEN)	
(1B) IS CONDITION DUE TO INJURY OR SICKNESS ARISING OUT OF PATIENT'S EMPLOYMENT? IF "YES" EXPLAIN	YES ☐ NO ☐
(1C) IS CONDITION DUE TO PREGNANCY? IF "YES" GIVE APPROXIMATE DATE OF COMMENCEMENT OF PREGNANCY	YES ☐ NO ☐ DATE 19
(2E) WHEN DID SYMPTOMS FIRST APPEAR OR ACCIDENT HAPPEN?	DATE 19
(2B) WHEN DID PATIENT FIRST CONSULT YOU FOR THIS CONDITION?	DATE 19
(2C) HAS PATIENT EVER HAD SAME OR SIMILAR CONDITION? IF "YES" STATE WHEN AND DESCRIBE	YES ☐ NO ☐
(3E) NATURE OF SURGICAL OR OBSTETRICAL PROCEDURE. IF ANY (Describe Fully)	
(3B) CHARGE TO PATIENT FOR THIS PROCEDURE INCLUDING POST OPERATIVE CARE	GIVE RESPONSE 19 $
(3C) IS PERFORMING IN HOSPITAL GIVE NAME OF HOSPITAL	INPATIENT ☐ OUTPATIENT ☐
(4) GIVE DATES OF OTHER MEDICAL (NON SURGICAL) TREATMENT, IF ANY	CHARGE IF NOT PER CALL OFFICE $ HOME $ HOSPITAL $ NURSING HOME * $ TOTAL NON SURGICAL CHARGES $
(5) WHAT OTHER SERVICES, IF ANY, DID YOU PROVIDE PATIENT? (GIVE DATES AND FEE)	
(6) WERE REGISTERED PRIVATE DUTY NURSES (R.N.'S) SERVICES NECESSARY?	YES ☐ NO ☐
(7) IS PATIENT STILL UNDER YOUR CARE FOR THIS CONDITION? IF NO, GIVE DATE YOUR SERVICES TERMINATED	YES ☐ NO ☐ DATE 19
(8A) HOW LONG WAS OR WILL PATIENT BE CONTINUOUSLY TOTALLY DISABLED? (Months and Days)	FROM 19 THRU 19
(8B) HOW LONG WAS OR WILL PATIENT BE PARTIALLY DISABLED?	FROM 19 THRU 19
(8C) WAS HOUSE CONFINEMENT NECESSARY? IF "YES" GIVE DATES	YES ☐ NO ☐ FROM 19 THRU 19
(9) TO YOUR KNOWLEDGE DOES PATIENT HAVE OTHER HEALTH INSURANCE OR HEALTH PLAN COVERAGE? IF "YES" IDENTIFY	YES ☐ NO ☐

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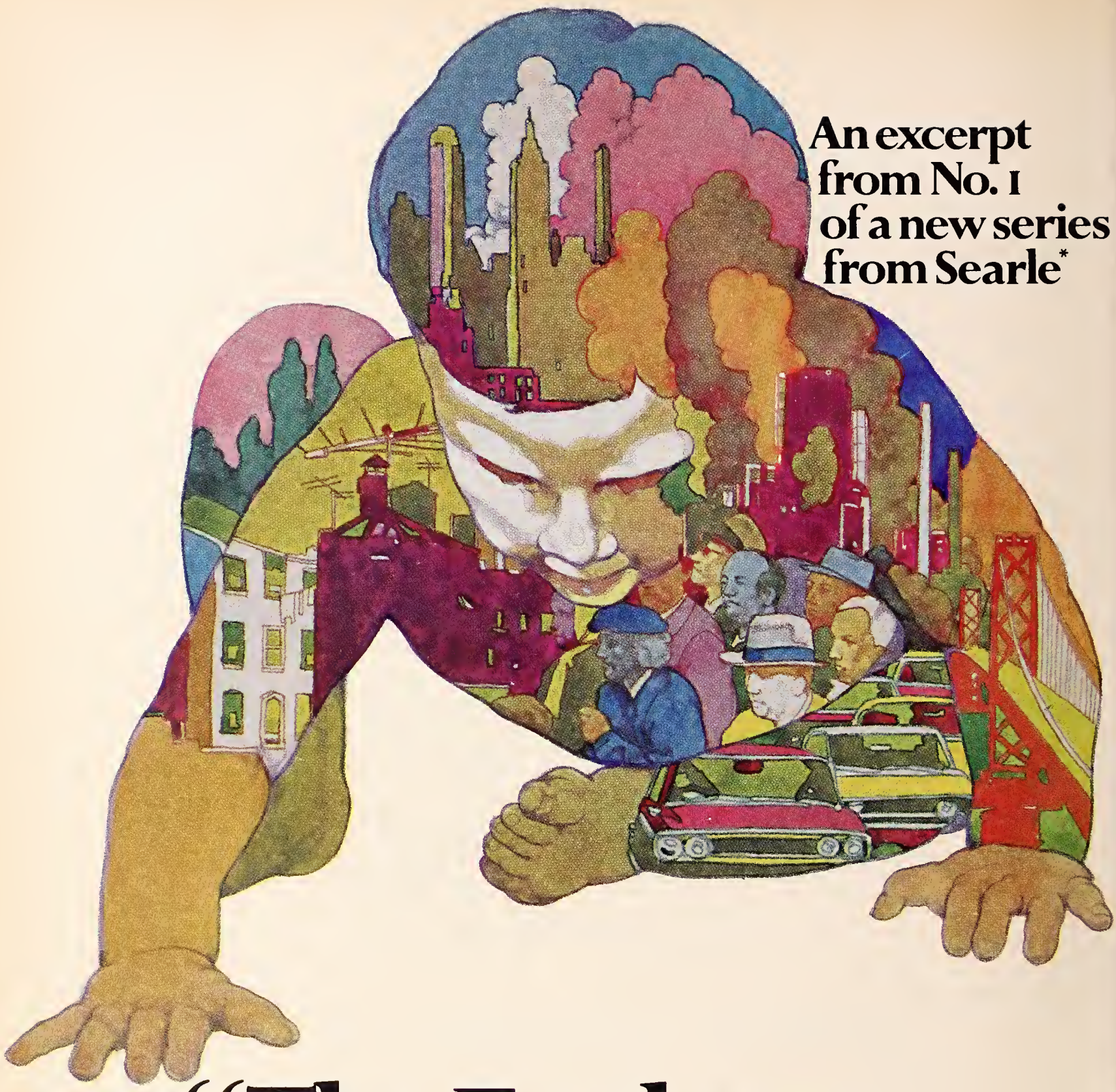
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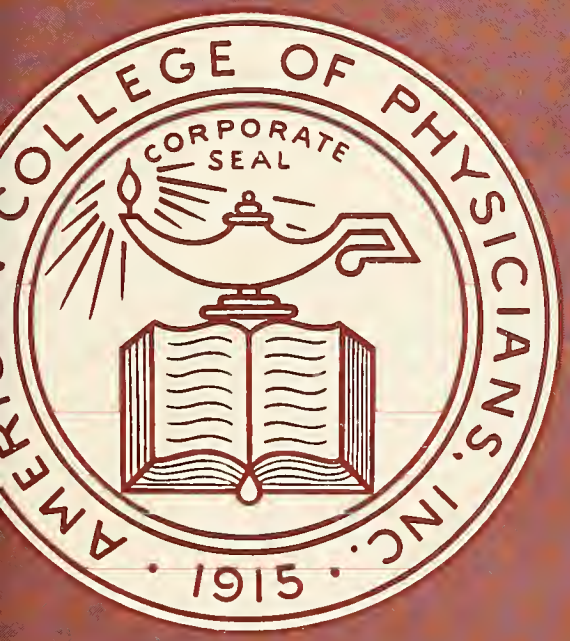
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APRIL, 1971/VOL. 28, NO. 4

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JOURNAL OF ARIZONA MEDICAL ASSOCIATION • MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

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Arizona Meeting

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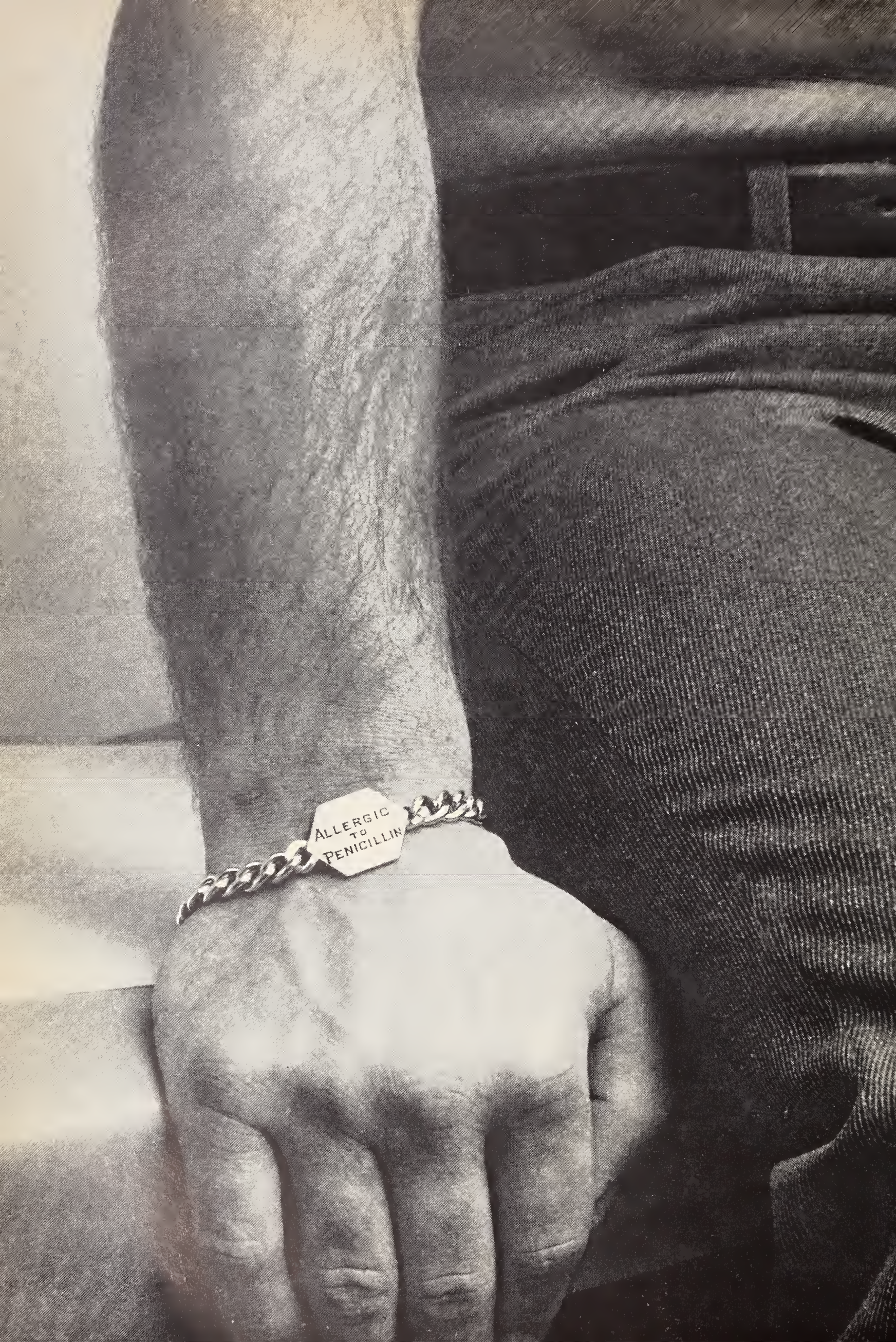
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Brief Summary

Indications

Erythrocin is indicated against gram-positive cocci — staphylococci (most strains), pneumococci and streptococci (including enterococci). Active against other pathogens, such as *Corynebacterium, Hemophilus, Clostridium, Neisseria,* and *Treponema pallidum,* the agents causing trachoma and lymphogranuloma venereum and primary atypical pneumonia caused by *Mycoplasma pneumoniae* (Eaton agent). Establish susceptibility of pathogenic organism when practical. Maintain therapeutic levels for ten days in the treatment of streptococcal infections to help prevent rheumatic fever and glomerulonephritis. Also consider local measures or surgery whenever indicated.

Contraindications

Known hypersensitivity to erythromycin. I.M. preparation also contraindicated in patients hypersensitive to the "caine" type of local anesthetics.

Precautions, Side Effects

Occasionally abdominal discomfort, cramping, nausea or vomiting may occur; generally controlled by reduction of dosage. Mild allergic reactions, such as urticaria and other skin rashes, may occur. Serious allergic reactions have been extremely infrequent; if hypersensitivity is encountered consider appropriate countermeasures, e. g., epinephrine, steroids, etc., and withdraw drug. The rare possibility of overgrowth of nonsusceptible organisms should be kept in mind; if it occurs withdraw drug and institute appropriate treatment. Local venous discomfort, generally mild, may occur with I. V. administration. I.M. preparation is suitable for deep intramuscular administration only; restrict use in children with small muscle mass. A mild transient local discomfort sometimes occurs following rectal insertion of Erythrocin Suppositories; discontinue if significant discomfort persists.

Administration and Dosage

I. ORAL: In adults with mild to moderate infections caused by readily-susceptible organisms 1.0 Gm. daily; more severe infections or those caused by less susceptible organisms 2.0 Grams daily; unusually severe infections up to 4 or more Gm./day. Daily dose in children is 15 to 25 mg./lb./day depending upon severity of infection. Daily dose should be administered in divided doses at 4-to-6 hour intervals. Continue treatment for at least 48 hours after symptoms have subsided and temperature has returned to normal. In fulminating or life-threatening infections, a parenteral form of erythromycin is preferred.

II. PARENTERAL: Intravenous administration may be continuous or intermittent (6 to 8 hour intervals); 1 to 4 Gm. daily in adults; 15 to 25 mg./lb./day in children, depending upon severity of infection. Recommended I.M. dose is 100 mg. (2 ml.) for adults, 50 mg. (1 ml.) for children 30 lbs. or more and 1.4 to 1.8 mg./lb. in smaller children. Injections are usually given at 6 to 8 hour intervals; may be given at 4 to 6 hour intervals for severe infections.

III. RECTAL: Following therapeutic doses are recommended in children: to 20 lbs., 1-125 mg. suppository every 8 hours; 20 to 40 lbs., 1-125 mg. suppository every 6 hours.

Change to oral therapy as soon as practicable.

ABBOTT

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Helps overpower pain

Each tablet contains: aspirin gr. 3½,
phenacetin gr. 2½, caffeine gr. ½.
No. 3 contains codeine phosphate* (32.4 mg.) gr. ½.
No. 4 contains codeine phosphate* (64.8 mg.) gr. 1.
*(Warning—may be habit forming.)

B. W. Co. narcotic products are Class "B," and as such are available on oral prescription, where State law permits.

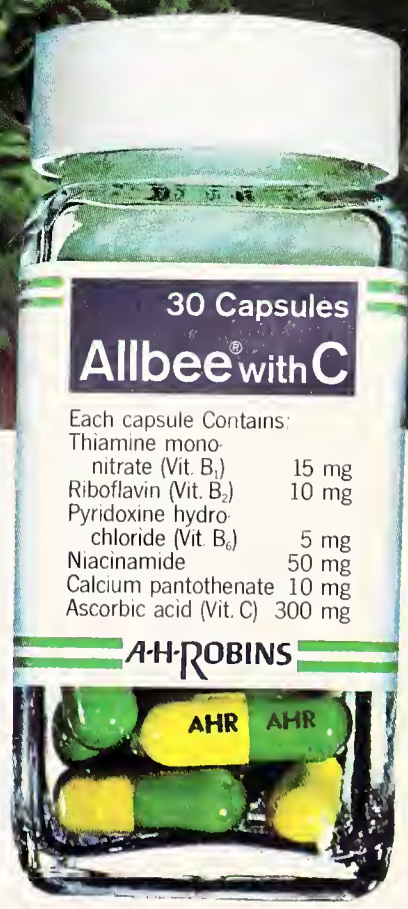
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hyoscyamine sulfate	0.1037 mg.	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0194 mg.	0.0582 mg.
hyoscine hydrobromide	0.0065 mg.	0.0065 mg.	0.0195 mg.
phenobarbital	(¼ gr.) 16.2 mg.	(½ gr.) 32.4 mg.	(¾ gr.) 48.6 mg.

(Warning: may be habit forming)

Brief Summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

A. H. ROBINS COMPANY, RICHMOND, VIRGINIA 23220

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Picture of low back pain

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Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

Parafon Forte tablets help to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

a nonsalicylate analgesic equal to aspirin for relief of pain,[1,2] yet unlikely to cause the gastric irritation[2,3] or increased bleeding time[4] associated with aspirin therapy.

and a skeletal muscle relaxant shown in extensive clinical studies to be useful in a variety of low back disorders[5-7] ...but which is not an antihistamine or tranquilizer derivative and is unlikely to produce a tranquilizing or sedative effect.[8]

Prescribe PARAFON FORTE for effective spasmolysis and analgesia in acute sprains, strains and myalgias of the lower back, including acute exacerbations of chronic conditions. Your patients will appreciate the restored comfort and freedom of movement it usually provides.

Contraindications: Sensitivity to either component. ***Warnings:*** *Usage in Pregnancy*—Use in woman of child-bearing potential only when potential benefits outweigh possible risks. ***Precautions:*** Exercise caution in patients with known allergies or history of drug allergies. If a sensitivity reaction or signs or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. ***Adverse Reactions:*** Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely, allergic-type skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions. In rare instances, *Paraflex* (chlorzoxazone) may possibly have been associated with gastrointestinal bleeding. While *Paraflex* (chlorzoxazone) and chlorzoxazone-containing products have been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Usual Adult Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL" —bottles of 100.

References: **1.** Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970. **3.** Vickers, F. N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C. H., Jr., and Britten, A. F. H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Kestler, O. C., and Gyurik, J.: Industr. Med. Surg. *21*:372, 1962. **6.** Forster, S., et al.: Amer. J. Orthop. *2*:285, 1960. **7.** Data on file, McNeil Laboratories, Inc. **8.** Friend, D. G.: Clin. Pharmacol. Ther. *5*:871, 1964.

*U.S. PATENT NO. 2,895,877

McNEIL LABORATORIES, INC., FT. WASHINGTON, PA. 19034

McNEIL



Hurricane Camille dumped up to 31 inches of rain on Virginia's Blue Ridge Mountains the night of August 19-20, 1969. She had already devastated the Gulf Coast from Louisiana to Florida, halted her northward journey over Kentucky and Tennessee, then headed eastward over West Virginia and Virginia.

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Emotional stress can be just as destructive to the individual as turbulent, ravaging flood waters are to land and property. Solfoton will contribute to the maintenance of a mental climate for purposeful living.

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SEDATION WITHOUT DEPRESSION

EACH TABLET OR CAPSULE CONTAINS:

Phenobarbital 16 mg.
(Warning: may be habit-forming)

Bensulfoid (See PDR) 65 mg.

Precaution: same as 16 mg. phenobarbital

DOSAGE: One tablet or capsule every 6 hours will sustain mild sedation.

Available in three forms to satisfy prescribing circumstances:

TABLETS	100s	500s	5000s
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AND LESS

Some skeletal muscle relaxants cause generalized muscle weakness. Not Norflex. Some require dosages as high as eight tablets a day for effective relief. Norflex relaxes only the muscles in spasm on one tablet b.i.d. Norflex checks pain. Reduces rigidity. Restores mobility. Has less side effects too. So Norflex does what's expected. And does it with less inconvenience.

Norflex®
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1 TABLET (100 mg.) B.I.D.

Indications: Acute spasm of voluntary muscles, regardless of location; especially post-traumatic, discogenic, and tension spasms.
Dosage: Two tablets per day for adults, regardless of weight or sex; one in the morning and one in the evening.
Contraindications: Contraindications for Norflex are due to the anticholinergic action of orphenadrine. Norflex should not be used in patients with glaucoma, pyloric or duodenal obstruction, stenosing peptic ulcers, prostatic hypertrophy or obstruction at the bladder neck, cardiospasm (megaesophagus) and myasthenia gravis. It should be used with caution in patients with tachycardia.
Since mental confusion, anxiety and tremors have been reported in patients receiving orphenadrine and propoxyphene concurrently, it is recommended that Norflex not be given in combination with propoxyphene (Darvon®).
Side Effects: Side effects of Norflex (orphenadrine citrate) are mainly due to the mild anticholinergic action of orphenadrine, and are usually associated with higher dosage. Dryness of the mouth is the first side effect to appear. When the daily dose is increased, possible side actions include: tachycardia, palpitation, urinary hesitancy or retention, blurred vision, dilatation of the pupil, increased ocular tension, weakness, nausea, vomiting, headache, dizziness, constipation, drowsiness and, rarely, urticaria and other dermatoses. Infrequently, an elderly patient may experience some degree of mental confusion. These mild side effects can usually be eliminated by reduction in dosage. Two cases of aplastic anemia associated with the use of Norflex tablets have been reported. No causal relationship has been established.
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- ☐ **belladonna alkaloids—for the hyperactive bowel**
- ☐ **simethicone—for accompanying distension and pain due to gas**
- ☐ **phenobarbital—for associated anxiety and tension**

Composition: Each chewable, fruit-flavored, scored tablet contains: 16 mg. phenobarbital (warning: may be habit-forming); 0.1 mg. hyoscyamine sulfate; 0.02 mg. atropine sulfate; 0.007 mg. scopolamine hydrobromide; 40 mg. simethicone.

Contraindications: Hypersensitivity to barbiturates or belladonna alkaloids, glaucoma, advanced renal or hepatic disease.

Precautions: Administer with caution to patients with incipient glaucoma, bladder neck obstruction or urinary bladder atony. Prolonged use of barbiturates may be habit-forming.

Side effects: Blurred vision, dry mouth, dysuria, and other atropine-like side effects may occur at high doses, but are only rarely noted at recommended dosages.

Dosage: Adults: One or two tablets three or four times daily. Dosage can be adjusted depending on diagnosis and severity of symptoms. Children 2 to 12 years: One half or one tablet three or four times daily. Tablets may be chewed or swallowed with liquids.

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(from the Greek **kinetikos**,
to move,
and the Latin **sedatus**,
to calm)

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TIMED-RELEASE ASPIRIN

ECONOMICAL • EFFECTIVE • LONG LASTING PAIN RELIEF
Dosage: 2 tablets followed by 1 or 2 tablets every 8 hours as required, not to exceed 6 tablets in 24 hours. For maximum nighttime pain relief and to help relieve early morning stiffness, 2 tablets at bedtime.
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One tablet q.i.d.

Indications: When used as adjunctive therapy for the rapid resolution of inflammation and edema, good results have been obtained in:
☐ Accidental Trauma ☐ Postoperative Tissue Reactions.
Other conventional measures of treatment should be used as indicated. In infection, appropriate anti-infective therapy should be given.
Contraindications: ORENZYME BITABS should not be given to patients with a known sensitivity to trypsin or chymotrypsin.
Precautions: It should be used with caution in patients with abnormality of the blood clotting mechanism such as hemophilia, or with severe hepatic or renal disease. Safe use in pregnancy has not been established.
Adverse Reactions: Adverse reactions with ORENZYME have been reported infrequently. Reports include allergic manifestations (rash, urticaria, itching), gastrointestinal upset and increased speed of dissolution of animal-origin surgical sutures. There have been isolated reports of anaphylactic shock, albuminuria and hematuria. Increased tendency to bleed has also been reported but, in controlled studies, it has been seen with equal incidence in placebo-treated groups. (See Precautions.) It is recommended that if side effects occur medication be discontinued.
Dosage: One tablet q.i.d.

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TRADEMARK: BITABS U.S. PATENT NO. 3,004,893 9/70 0-009A 161

Orenzyme® Bitabs

Trypsin: 100,000 N.F. Units, Chymotrypsin: 8,000 N.F. Units; equivalent in tryptic activity to 40 mg. of N.F. trypsin

The causes of vaginitis are multiple



Trichomonads... monilia... bacteria
You can depend on AVC—comprehensive therapy that combats all three major vaginal pathogens, alone or in combination.

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Cream (aminacrine hydrachlaride 0.2%, sulfanilamide 15.0%, allantain 2.0%)

Suppositories (aminacrine hydrachlaride 0.014 Gm., sulfanilamide 1.05 Gm., allantain 0.14 Gm.)

Contraindications: Known sensitivity to sulfonamides.
Precautions/Adverse Reactions: The usual precautions for topical and systemic sulfanamides should be observed because of the possibility of absorption. Burning, increased local discomfort, skin rash, urticaria or other manifestations of sulfonamide taxicity are reasons to discontinue treatment.
Dosage: One applicatorful or one suppository intravaginally once or twice daily.
Supplied: Cream – Four-ounce tube with or without applicator. Suppositaries – Box of 12 with applicator.

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The Protectors

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6



the night shift of depression... insomnia

Depression is a 24-hour-a-day problem. And insomnia is often its nocturnal expression. In fact, insomnia may be a key symptom in establishing the diagnosis of depression.

ELAVIL HCl (Amitriptyline HCl, MSD) may prove quite helpful when you have arrived at such a diagnosis. Unlike psychic energizers or agents that merely elevate mood, ELAVIL HCl embodies a mild antianxiety action which manifests itself even before the fundamental antidepressant activity of the drug becomes evident. Daytime drowsiness occurs in some patients, usually within the first few days of therapy.

NOTE: Not recommended during the acute recovery phase following myocardial infarction. Patients with cardiovascular disorders should be watched closely; arrhythmias, sinus tachycardia, and prolongation of the conduction time have been reported, particularly with high doses; myocardial infarction and stroke have been reported with drugs of this class. Close supervision is required for hyperthyroid patients or those receiving thyroid medication. Concurrent electroshock therapy may increase the hazards of therapy; such treatment should be limited to patients for whom it is essential. Discontinue the drug several days before elective surgery if possible.

Contraindications: Known hypersensitivity. Should not be given concomitantly with or within at least 14 days following the discontinuance of a monoamine oxidase inhibitor. Then initiate dosage of amitriptyline HCl cautiously with gradual increase in dosage until optimum response is achieved. Not recommended during the acute recovery phase following myocardial infarction or for patients under 12 years of age.
Warnings: May block the antihypertensive action of guanethidine or similarly acting compounds. Should be used with caution in patients with a history of seizures or urinary retention, or with narrow-angle glaucoma or increased intraocular pressure. Patients with cardiovascular disorders should be watched closely; arrhythmias, sinus tachycardia, and prolongation of the conduction time have been reported, particularly with high doses; myocardial infarction and stroke have been reported with drugs of this class. Close supervision is required for hyperthyroid patients or those receiving thyroid medication. May impair mental and/or physical abilities required for performance of hazardous tasks, such as operating machinery or driving a motor vehicle. Safe use during pregnancy and lactation has not been established; in pregnant patients, nursing mothers, or women who may become pregnant, weigh possible benefits against possible hazards to mother and child.
Precautions: When used to treat the depressive component of schizophrenia, psychotic symptoms may be aggravated; in manic-depressive psychosis, depressed patients may experience a shift toward the manic phase, and paranoid delusions, with or without associated hostility, may be exaggerated; in any of these circumstances, it may be advisable to reduce the dose of amitriptyline HCl, or to use a major tranquilizing drug, such as perphenazine, concurrently. When given with anticholinergic agents or sympathomimetic drugs, close supervision and careful adjustment of dosages are required. May enhance the response to alcohol and the effects of barbiturates and other CNS depressants. The possibility of suicide in depressed patients remains during treatment and until significant remission occurs; this type of patient should not have easy access to large quantities of the drug. Concurrent electroshock therapy may increase the hazards of therapy; such treatment should be limited to patients for whom it is essential. Discontinue the drug several days before elective surgery if possible.
Adverse Reactions: *Note:* Included in this listing are a few adverse reactions not reported with this specific drug. However, pharmacological similarities among the tricyclic antidepressant drugs require that each reaction be considered when amitriptyline is administered.
Cardiovascular: Hypotension, hypertension, tachycardia, palpitation, myocardial infarction, arrhythmias, heart block, stroke. *CNS and Neuromuscular:* Confusional states; disturbed concentration; disorientation; delusions; hallucinations; excitement; anxiety; restlessness; insomnia; nightmares; numbness, tingling, and paresthesias of the extremities; peripheral neuropathy; incoordination; ataxia; tremors; seizures; alteration in EEG patterns; extrapyramidal symptoms. *Anticholinergic:* Dry mouth, blurred vision, disturbance of accommodation, constipation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, parotid swelling. *Endocrine:* Testicular swelling and gynecomastia in the male, breast enlargement and galactorrhea in the female, increased or decreased libido. *Other:* Dizziness, weakness, fatigue, headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, drowsiness, jaundice. *Withdrawal Symptoms:* Abrupt cessation of treatment after prolonged administration may produce nausea, headache, and malaise; these are not indicative of addiction.
How Supplied: Tablets containing 10 mg and 25 mg amitriptyline HCl, in single-unit packages of 100 and bottles of 100, 1000, and 5000; tablets containing 50 mg amitriptyline HCl, in single-unit packages of 100 and bottles of 100 and 1000; for intramuscular use, in 10-cc vials containing per cc: 10 mg amitriptyline HCl, 44 mg dextrose, and 1.5 mg methylparaben and 0.2 mg propylparaben as preservatives.

For more detailed information, consult your MSD representative or see the Direction Circular. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, Pa. 19486

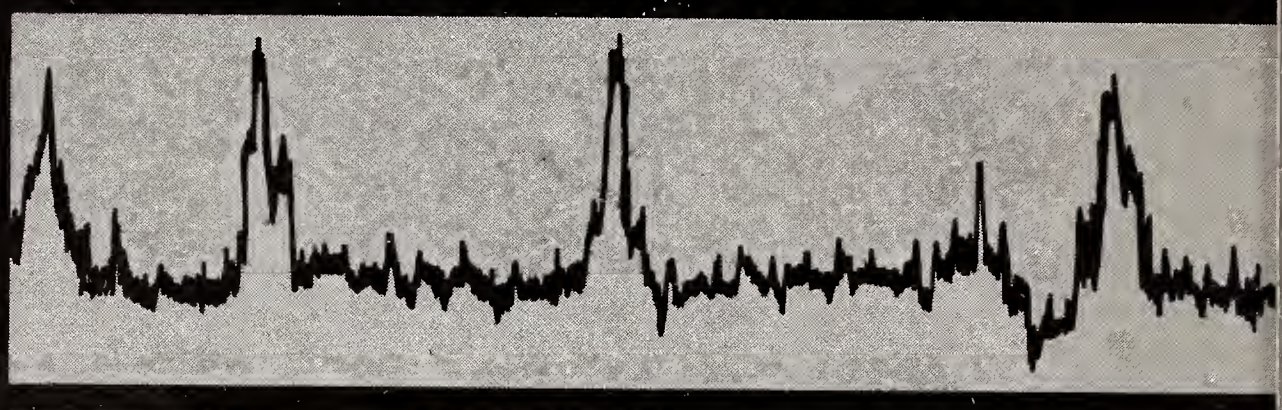
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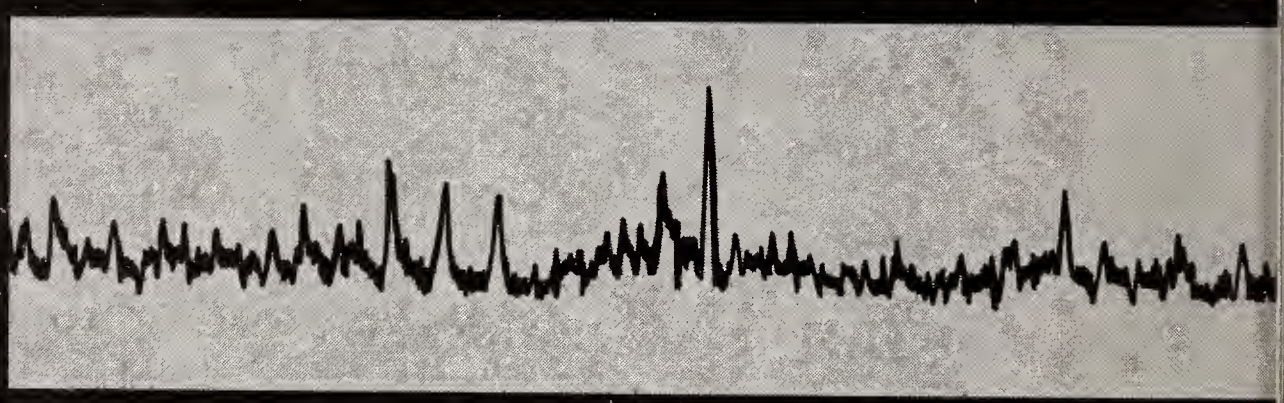
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An intestinal autobiography of rage, contentment and horror*

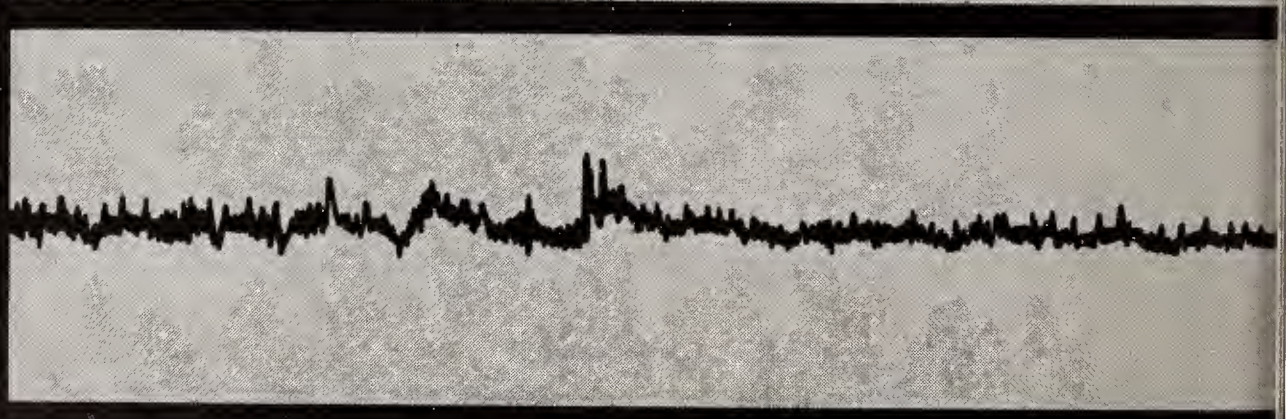
"Feeling unfairly taxed by the government (Internal Revenue Service) and not given enough attention by A.U.O. [an experimenter to whom the subject became very attached], he became overtly critical and accusatory. He shouted, raged, and threatened to quit."*



"The motility that day was quiet. This type of recording is seen regularly when he is relaxed and contented and the laboratory seems peaceful."*



He was overwhelmed by "paralyzing horror" when told he would need a partial laryngectomy for removal of an early carcinoma; "...the activity of the ileum virtually ceased for over a five-minute period...."*



Background

*Data presented here derive from a 13-year ongoing study by Henry Harrison Sadler, M.D., and Aline Underhill Orten, Ph.D., at Wayne State University. Their findings, which demonstrate a correlation between the emotional state of a human subject and the motility of an isolated segment of his ileum, were published in the April, 1968, *American Journal of Psychiatry*, volume 124, page 1375.

The subject is a 56-year-old man with a 40-cr Thiry loop of ileum created as a result of emergency surgery. A person of modest attainment and simple tastes, the subject depends on the investigators as he might his own family. His full-time job is as a "human laboratory," and throughout the 13-year perio of the study, he has taken great personal prid in his own participation.

A story charged with emotion

The graphs on the facing page are intestinal motility readings on a human subject experiencing the emotions of rage, contentment and horror (see "Background" below left). This "intestinal autobiography" dramatizes the point that certain emotions correlate with specific patterns of G.I. motility.

The visceral clutch and functional G.I. disorders

The gut response to stress has been amply demonstrated in many functional G.I. disorders. Nervous diarrhea and irritable colon syndrome, for example, are disorders associated with abnormal G.I. motility. And these disorders are commonest among patients sensitive to life-stress situations productive of conflict and excessive anxiety.

Librax® calms anxiety, calms the gut

In these areas of G.I. pathology, Librax has become a mainstay of adjunctive therapy. Reason? Effective two-way calming action. Librax, by relieving excessive anxiety, not only helps calm emotional overreaction to stress, it controls intestinal hypermotility, too. Depend on Librax—the only drug that combines the well-known antianxiety action of Librium® (chlordiazepoxide HCl) and the potent, dependable antisecretory/antispasmodic action of Quarzan® (clidinium Br).

1 or 2 capsules, 3 or 4 times daily in the treatment of nervous diarrhea and irritable colon syndrome

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated as adjunctive therapy to control emotional and somatic factors in gastrointestinal disorders.

Contraindications: Patients with glaucoma; prostatic hypertrophy and benign bladder neck obstruction; known hypersensitivity to chlordiazepoxide hydrochloride and/or clidinium bromide.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering Librium (chlordiazepoxide hydrochloride) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards. As with all anticholinergic drugs, an inhibiting effect on lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude development of ataxia, oversedation or confusion (not more than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e.g., excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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The American College of Physicians (Arizona) and the Arizona Society of Internal Medicine gratefully acknowledge the opportunity granted by *Arizona Medicine* and its editor, John R. Greene, M.D. to publish for the second year, the scientific papers presented at the Regional Meeting in Phoenix, November, 1970.

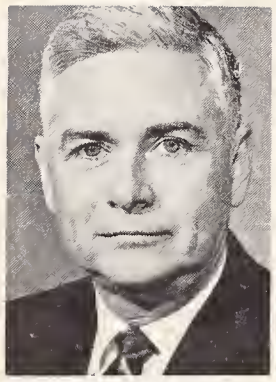
The annual sessions offer a means for the practicing Internist to present topics of scientific and social interest to his peers. The College is particularly interested in stimulating medical students, interns, and residents to take an active part in these meetings. This year, four scientific papers were submitted and accepted from the student-house officer group. We hope this will encourage a larger number to participate next year.

Robert L. Sommerville, M.D.



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ARRANGEMENTS



JOHN N. CHRISTIANSON, M.D.
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HYPERPARATHYROIDISM MASKED BY CUSHING'S SYNDROME

STANLEY H. SCHNEIDER, F.A.C.P.

Multiple tumors of the endocrine system are well known and may occur sequentially over a period of years. The glands usually involved are the pituitary, parathyroid, and pancreas.[1] A second type involving pheochromocytoma, medullary thyroid carcinoma, hyperparathyroidism, and Cushing's disease has been more recently described.[2] Both are frequently familial.

The following case report describes a forty-one year old divorced female who developed classic hypercorticism due to an adrenal cortical adenoma. Shortly after the successful surgical excision of the right adrenal with its adenoma, she presented with the signs and symptoms of parathyrotoxicosis. The latter was successfully treated with the excision of two large parathyroid glands.

REPORT OF A CASE

H.P.: a forty-one year old divorcee, who worked as a cafeteria salad cook in Tombstone, was first seen on July 17, 1968. In 1965 she developed the classic onset of diabetes mellitus with polyuria, polydipsia and weight loss. She was hospitalized at the Cochise County Hospital and was successfully controlled with tolbutamide; later because of recurrence of uncontrolled glucosuria, she was started on insulin. In August 1968 she was well controlled on NPH insulin (50U daily), DBI-TD b.i.d., and a 1,500 calorie diet. She had developed hypertension at the time of the discovery of diabetes.

Coincidental with the start of insulin she gained about 15 pounds and noted easy bruisability, frequent superficial skin infections, frequent pedal edema controlled with oral diuretics, and rounding of her face. Evaluation at the Cochise County Hospital in February 1968 led to a presumptive diagnosis of diabetic nephropathy. During this period she had the cessation of her menses, with her last menstrual period on July 1, 1967. In addition, she had daily headaches relieved by aspirin and increased mustache requiring occasional shaving.

System review was positive in the following areas: Increasing depression after the death of a child in 1965; Frequent alcoholic abuse until 1965 when she became a teetotaler; she was (Gr 10 P 8) with normal deliveries and no toxemia. Her heaviest baby weighed 8 pounds at birth.

Family history is significant in that her mother died at 65 years of diabetes. Her 87 year old father and 12 siblings were in good health. There is no further history of diabetes, kidney stones, ulcer, etc.

On her first admission to Tucson Medical Center on August 19, 1968 she was a depressed appearing, oriented, cooperative female who looked older than her age. Vital signs were normal except for a blood pressure of 150/90. There was nominal increase in her facial hair.

Significant features were the presence of moon facies and multiple teliangestasia on her cheeks. There was a hump on her neck. Her skin was tissue paper thin and covered with multiple bruises. She had a pot belly and her liver was felt three finger breadths below the right costal margin. There was 2+ pedal edema. Neurologic examination as well as optic fundi were normal.

On September 4, 1968 an adrenal exploration was successfully undertaken, with the removal of the right adrenal containing a large adenoma. The right adrenal weighed 17 gm., and the tumor occupied 2.9 cm. of the 4.2 cm. diameter of the gland. An atrophic left adrenal was biopsied; post operatively she did well.

Her last supplemental cortisone was 12.5 mgm. (by mouth) on September 15, 1968. A fasting plasma cortisol level on September 19, 1968 was 9 micrograms %. She was discharged on Tolinase (250 mgm. daily) on September 21, 1968.

Within a few days she developed nausea and vomiting followed by staggering gait, tachycardia, generalized malaise, and profuse weakness, lethargy, and headache. She was readmitted to the Tucson Medical Center on October 5, 1968. She had significant postural hypertension with supine blood pressure of 140/90 and erect blood pressure of 100/70. She could hardly get herself out of bed and her thinking was hazy.

Laboratory data, aside from calcium abnormalities, demonstrated normochromic, normocytic anemia with a hemoglobin of 10.9gm%. Severe hypokalemia, (K=2.4) presumably due to continued vomiting, was finally corrected with IV KCL. Calciums varied between 14.3 and 16.2; phophorus was normal. Twenty-four hour urine for calcium was 1,190 mgm. per twenty-four hours with a volume of 5,460 ml. Serum protein electrophoresis and bone marrow were normal.

On October 17, 1968 she underwent neck exploration with the removal of two large parathyroid glands, one at the left lower thyroid pole was 1.5 cm. in width, and the other from the right midthyroid was 1.0 cm. in width. Postoperatively her calciums came down to normal.

Twenty-four hour urine for calcium on October 30, 1968 was 124 mgm. in a volume of 1,950 ml. She was discharged on Tolinase 0.1 gm. daily and hydrocortisone 20 mgm. each a.m.

She was lost to follow up until September 9, 1969, when she reappeared with a remarkable change in her appearance. Instead of the lethargic edematous, moderately obese elderly female, she was sleek and svelte weighing 102 pounds (down from a high of 140 pounds). Her blood pressure was 120/80. Her menses had restarted in November 1968 and were regular. Hydrocortisone was tapered by 5 mgm. decrements every two weeks and stopped on November 17, 1969. She was last seen on December 16, 1969 with an entirely normal physical examination. She was working regularly and her diabetes was well maintained on tolinase 0.1 gm. daily.

The laboratory data supporting the sequential diagnoses are seen in the following tables:

TABLE 1 – STEROID EXCRETIONS
July 1, 1968

				Normals
24 hour urine	17	OHCS	33.0 mgm.	(4-10)
24 hour urine	17	KS	10.4	(6-15)
24 hour urine	17	KGS	————	(3-15)
Plasma Cortisol			26.5 mgs.	
Plasma Cortisol, Post Decadron				

TABLE 2 – ACTH STIMULATING TEST
August 1968

24 hour urine	17	OHCS	10.2	ACTH———26.5
24 hour urine	17	KS	10.0	ACTH———21.0
24 hour urine	17	KGS	11.0	ACTH———28.0
Plasma Cortisol			25.0	ACTH———44.0
Plasma Cortisol			26.0	Post Decadron

TABLE 3 – PARATHYROID STUDIES
August 1968: preadrenal operation

Calcium	11.2	9.8	11.0	13.0	10.5	normal	9-11
Phosphorus	2.8	2.7	3.4			normal	2.5-5

October 1968

Calcium	16.2	14.3	14.7	16.0
Phosphorus	3.1	3.6	4.5	3.1
Post Op Calcium	10.0	9.8	10.2	10.9

TABLE 4 – POST OPERATIVE PHOSPHORUS AND CALCIUM VALUES

Sept. 10, '69		Oct. 13, '69	Nov. 11, '69	Dec. 12, '69
Ca	11.0	9.9	10.0	10.0
P	4.3	2.5	3.5	3.4

DISCUSSION

The coexistance of these two entities has only rarely been documented pre-mortem and more rarely cured. [3,4,5,6]

The diagnosis of Cushing's syndrome was established by the elevated excretion of 17 hydroxycorticosteroids and failure of 1 mgm. decadron by mouth at 11 p.m. to supress the fasting plasma cortisol level the next morning. The normal values of the ketogenic steroids and normal responsiveness of all the steroid excretions to 40 U of IV ACTH over an eight hour period illustrates the difficulties in the differentiation of adrenal hyperplasia from adrenal tumor.

Serum calcium variations preadrenal exploration were ignored and were not checked post operatively. Her smooth postoperative course lulled us into mental lethargy.

On her re-admission she was acutely ill, and our first thoughts were that she was in adrenal crisis. However, her plasma cortisol levels and steroid excretion were normal. The hypokalemia was immediately strong evidence against the diagnosis of adrenal insufficiency. With the finding of hypercalcemia, a rapid evaluation eliminated other causes of hypercalcemia, viz-myeloma, thyrotoxicosis, sarcoid, Vitamin D intoxication, metastic carcinoma, etc. Parathyroid exploration demonstrated two large glands, excision of which resulted in the cure of hyperparathyroidism.

Differentiation between parathyroid hyperplasia and parathyroid adenoma can only be made by the subsequent clinical events. If only two hyperplastic glands had been removed, one would anticipate recurrence of hypercalcemia. Removal of one or more adenomata should result in postoperative hypocalcemia. Since this did not occur, we felt that she had hyperplasia. However, one year postoperatively she was weaned from hydrocortisone, and her serum calcium remained normal. Thus, it is our feeling that two parathyroid adenomas were responsible for her hypercalcemia.

Areas of cortical demineralization in the calvarium, noted in August 1968, should have alerted us to another diagnostic possibility. The skull does not participate in the process of generalized osteoporosis, whether due to hypercorticism or other causes. The hands and lamina dura did not participate in bony resorption. Despite a multitude of physiologic tests, an elevated serum calcium remains the single most important and constant factor in the diagnosis of hyperparathyroidism.

SUMMARY

A forty-one year old woman with diabetes of two years duration had an increase in her insulin

requirements followed by chemical and laboratory evidence of hypercorticism. Prior to her adrenalectomy, with the removal of a cortical adenoma, she had demineralization of the calvarium and occasional high serum calcium. One month after adrenalectomy, she was readmitted in desperate straits, due to parathyrotoxicosis, which was cured by the excision of two parathyroid adenomata. It seems logical to conclude, that the signs and symptoms of hyperparathyroidism were ameliorated by endogenous hypercorticism, only to be unmasked by cure of her Cushing's syndrome.

My thanks to Max Kartchner, M.D. for referring the patient to me and to Mark Kartchner, M.D., for so ably performing surgery on this patient.

REFERENCES

1. Schmid, Jakob R., Labhart, Alexis, and Rossier, P. H., Relationship of Multiple Endocrine Adenomas to the Syndrome of Ulcerogenic Islet Cell Adenomas (Zollinger-Ellison), Occurrence of Both Syndromes in One Family, American Journal of Medicine, 31:343-353, September 1961.
2. Steiner, Alton L., Goodman, A. David, and Powers, Samuel R., Study of a Kindred With Pheochromocytoma, Medullary Thyroid Carcinoma, Hyperparathyroidism and Cushing's Disease: Multiple Endocrine Neoplasia, Type 2, Medicine, 47:371-409, September 1968.
3. Lohrenz, Francis N., Mallin, Sanford R., Ellison, Edwin H., and Lawton, Ben R., Multiple Endocrine Adenomatosis Presenting as Cushing's Syndrome and Concurrent Hyperparathyroidism with Massive Gastric Hemorrhage, The Wisconsin Medical Journal, 67:209-15, April 1968.
4. Robinson, William W., Need for Further Study as to the Role of the Parathyroids in Cushing's Syndrome, Journal of Clinical Endocrinology and Metabolism, 14:811, July 1954.
5. Raker, John W., Henneman, Philip H., Graf, Walter S., Coexisting Primary Hyperparathyroidism and Cushing's Syndrome, Journal of Clinical Endocrinology and Metabolism, 22:273-280, March 1962.
6. Feldman, Fred, Mitchell, Wallace, and Soll, Sidney: Psychosis, Cushing's Syndrome and Hyperparathyroidism, Canadian Medical Association Journal, 98:508-11, March 1968.

PAROTID ENLARGEMENT AND HYPERLIPIDEMIA

HAROLD C. TRETBAR, M.D.

In 1965 I referred my brother-in-law to the National Institutes of Health with a presumptive diagnosis of Sjogren's syndrome. He had complained of tender swollen parotid glands for several years. A parotid biopsy had shown normal salivary gland structures with massive fatty infiltration. Extensive blood testing was normal except for elevated plasma triglyceride and cholesterol levels.

In 1969 Kaltreider and Talal from the Arthritis and Rheumatism Branch of the National Institute of Arthritis and Metabolic Diseases reported on 5 patients with parotid enlargement and hyperlipidemia.[1] My brother-in-law was Case #1. Recently, I had the opportunity to investigate another patient with similar symptoms.

CASE REPORT

Mr. S. M. was a 32 year old, married, self-employed contractor. He had noted swelling in the area in front of each ear for several years. This was usually worse the morning after a night of heavy drinking. This was not particularly tender and he had accepted it as just being a nuisance. He had mumps as a child. His general health had been excellent.

Physical examination showed a well developed, pleasant male in no acute distress. He was 6' tall. He weighed 189 pounds. His blood pressure was 160/110. Both parotid glands were firm, non-tender, and approximately 2-3 times normal size. Sub-maxillary glands were not palpable, and no other nodules or lymph nodes were felt. There was normal tear formation and no lack of saliva flow.

The examination of the heart and lungs was normal. The liver edge could be felt but only with deep inspiration.

Pertinent laboratory work showed a hematocrit of 55% with a hemoglobin of 17.5 grams. The white blood cell count and differential were normal. A T4 thyroid test was 4.6 mcgs.%. Serum amylase was 66 mgs.%. A uric acid was normal. Kidney and liver tests were normal. A glucose tolerance test was normal. His cholesterol was 340 mgs.% (normal to 300 mgms.%). The serum triglycerides were 276 mgs.% (normal to 190 mgms.%). The plasma was clear. Electrophoresis showed normal chylomicrons, decreased beta lipoproteins, markedly elevated pre-beta lipoproteins and normal alpha lipoproteins. This was characteristic of Type IV endogenous hyperlipidemia.

DISCUSSION

There are many causes of parotid enlargement. These can be divided into inflammatory and non-inflammatory.[1] (chart #1.)

CHART #1
PAROTID ENLARGEMENT

Inflammatory	Non-Inflammatory
Pyogenic	Diabetes
Calculi	Lactation
Sarcoid	Malnutrition
TBC	Obesity
Fungus	Drugs
Lymphoma	Alcoholic
Sjogrens	Liver Disease

All 5 patients of Kaltreider and Talal's were referred with the diagnosis of Sjogren's syndrome. Two of these had had parotid biopsies showing only fatty infiltration of the parotid glands. Two others had biopsies of the minor salivary glands of the lip which did not show lymphoid infiltration. Further investigation of these patients brought forth a common picture of parotid enlargement, elevated blood pressure, occasional abnormal glucose tolerance test, a Type IV or V lipid profile with elevated triglycerides and pre-beta lipoproteins. These findings occurred in professional workers with a more than average alcoholic intake of 8-10 ounces of liquor daily. In none of these patients was there evidence of liver disease or connective tissue disorder.

The pertinent values of these 5 patients are compared with Mr. S. M. (chart #2). In this group were 2 chemists, a government worker, one phychologist and an obsese housewife. She was the only female and a non-drinker. S. M. was a husky contractor who drank 8-10 ounces of whiskey daily. He had not known of prior hypertension and there was no family history of high blood pressure. The degree of hypertension in this group is remarkable. No explanation has been offered. Further studies are planned for S. M.'s high blood pressure.

CHART #2

	1	2	3	4	5	S.M.
Age	45	49	51	43	46.	32
Work	Chem	Gov	Psych	Chem	Hw	Contr
Ht.	5'10	5'8	5'8	5'11	4'9	6'0
Wt.	198	196	183	208	220	189
Bp.	130	180	156	160	180	160
	90	120	100	110	110	110
Gland Size	2+	3+	2+	2+	3+	2+
Oz. of Drink	8	10	8	1 Qt. Wine	0	10
*TRI	4696	216	370	312	266	276
**CHOL	800	264	342	230	228	340
Lipid Type	5	4	4	4	4	4
GTT		+	+		+	

*Triglyceride — Normal 190
**Cholesterol — Normal 310

Four of the patients and S. M. had a Type IV lipid profile with elevation of the triglycerides. Only Case 1 had a Type V pattern with a very high level of triglycerides.

Glucose tolerance tests were abnormal in 3. S. M. had a normal glucose tolerance test although he had a diabetic father.

The patients at NIH were placed on an isocaloric, low cholesterol diet with 20% protein, 40% fat and 40% carbohydrates. They all had a decrease in the size of their parotids and a fall in the blood lipids. Two reversed their electrophoretic patterns to normal. So far, I have not been able to convince S. M. to follow the NIH diet carefully or change his drinking habits.

This distinct syndrome differs from the asymptomatic parotid gland enlargement associated with malnutrition,[2] alcoholic liver disease,[3] obesity, and diabetes mellitus.[4] Conversely, parotid enlargement was not documented in a study of 214 patients with hyperlipidemia.[5]

Bennett and Burch, et al, recently investigated the relationship of parotid enlargement in the Pima Indians to age, obesity and diabetes mellitus.[6] They concluded the most direct relationship was with obesity and age. It would be interesting to know if they have records concerning lipids, hypertension or alcoholic intake for this study group.

COMMENTS

These 6 patients have a combination of parotid enlargement with a Type IV or V hyperlipidemia. They are mildly hypertensive, energetic people who use more than the usual amount of alcohol. Most of these abnormalities can be reversed by restricting alcohol and following a limited carbohydrate diet.

In regard to the status of my brother-in-law, I can report he remains generally healthy — but has difficulty with his diet. He still gets some swelling and tenderness of the parotids if he increases his carbohydrate intake. And he still likes his bourbon.

REFERENCES

1. Kaltreider, H. B., and Talal, N.: Bilateral Parotid Gland Enlargement and Hyperlipoproteinemia, JAMA 210:2067-2070 (Dec.) 1969.
2. Sandstead, H. R.; Koehn, C. J.; and Sessoms, S. M.: Enlargement of the Parotid Gland in Malnutrition, Amer. J. Clin. Nutr. 3:198-214 (May-June) 1955.
3. Wolfe, S. J.; Summerskill, W. H. J.; and Davidson, C. S.: Parotid Swelling, Alcoholism and Cirrhosis, New Eng. J. Med. 256:491-495 (Mar.) 1957.
4. Davidson, D.; Leibel, B. S.; and Berris, B.: Asymptomatic Parotid Gland Enlargement in Diabetes Mellitus, Ann. Intern. Med. 70:31-38 (Jan.) 1969.
5. Schatz, I. J.: Classification of Primary Hyperlipidemia, JAMA 210:701-704 (Oct.) 1969.
6. Levine, S. B.; Samplincr, R. E.; Bennett, P. H.; Rushforth, N. B.; Burch, T. A.; Miller, M.: Asymptomatic Parotid Enlargement in Pima Indians, Ann. Intern. Med. 73:571-573 (Oct.) 1970.

THE EFFECTS OF CALCIUM AND MAGNESIUM ON PTH SECRETION

JEROME H. TARGOVNIK, M.D.

The parthyroid differs from other endocrine glands in several respects:

1. Phylogenetically, the parathyroid appear late, being first seen in the amphibia

2. Most endocrine glands make more than one hormone and have several types of secretory cells -- only one hormone and one type of cell have been identified.

3. Most endocrine glands are under complex neuro-endocrine control, involving trophic hormones, neural paths and both long and short feed back loops, by which the hormones themselves or their metabolic effects modulate target gland functions. The parathyroids are under the direct specific and unique control of bivalent cation concentration in the blood. It is to this last point that we will address ourselves in the remainder of this talk.

In the 1940's and 1950's classical experiments have suggested and more recent studies by radio immuno assy confirmed that the secretion of parathyroid hormone is controlled by the level of serum calcium. There is a proportional relational relationship between hormone secretion **in VIVO** and serum calcium, with rapid changes in the circulatory level of PTH being noted within minutes after alteration in extra-cellular cation concentration.

In the last few years there have been a number of both experimental and clinical observations implicating Mg++ in the control of and action of PTH. Mg++ has two effects on calcium metabolism: (a) It is necessary for the action of PTH on bone and (b) it controls along with Ca++, and Mg++ the secretion of PTH.

We studied the latter problem, the effect of Ca and Mg on PTH secretions.

Explants of bovine parathyroid were grown in organ culture under conditions of varying Ca++ and Mg++ ion concentration. PTH was assayed by a highly sensitive radio immuno assay, with the separations of bound from free hormone being performed by micro fine silica. The media gave a reaction of identity with purified bovine PTH.

At high constant levels of Mg++ there was no stimulation of PTH by low Ca++. At low Mg++, the expected proportional response to Ca++ was demonstrated. Similar results were obtained at constant Ca++ and varying concentration of Mg++. The response of these explants were equally sensitive to change in Ca++ or Mg++. When the data obtained were plotted PTH release versus total divalent ion concentration, the classical proportional response was obtained over the whole range of Ca++ and Mg++ ion concentration.

To study this problem in finer detail, another series of experiments were run. The total cation concentration was held constant while the ratio of Ca++ and Mg++ were varied. These studies again confirmed our original observations on total divalent cation concentration, and PTH secretion. We also discovered that below a critical Mg++ concentration, approximately 0.15mm liter, parathyroid tissue did not respond to decreased Ca++ concentration.

Our final series of experiments attempted to assess whether cyclic AMP had any role in either the production or release of PTH. We could not stimulate parathyroid tissue to release PTH with cyclic AM or the theophyline in either high or low calcium media. This stands in marked contrast to most other endocrine glands.

In summary, we may say:

1. Release of PTH is equally responsive to Ca and Mg ions, in regions of maximal sensitivity.

2. Secretion of PTH is a function of toal divalent cation concentrations.

3. Very low (Mg++) inhibits release of PTH.

4. These effects are not mediated by cyclic AMP.

5. In VITRO studies of PTH secretions confirm the proportional regulation by calcium ion predected from in VIVO studies, in the cow and suggest that Mg++ may be a physiologic regulator of secretion.

SALINE SUPPRESSION OF PLASMA A TENSION PLASMA RENIN ACTIVITY IN HYPERLDOSTERONE AND

DAVID C. KEM, MAJOR, MC, DARRELL MAYES,
MYRON WEINBERGER, M.D. CHARLES A. NUGENT, M.D.

Determination of plasma aldosterone concentration before and after a 4-hour intravenous infusion of saline into a recumbent patient is an effective means for identifying patients with primary aldosteronism. In response to this infusion normal subjects and patients with essential hypertension markedly reduce their plasma aldosterone concentration (5 ng/100 ml or less). The plasma aldosterone of patients with primary aldosteronism is less than normally suppressible.

The diagnosis and resection of an aldosterone producing adenoma usually results in improvement or cure of the associated hypertension. This potentially curable form of hypertension has been reported by some to be uncommon (1) while others report its presence in 8% of a series of hypertensive patients (2). In any case, this diagnosis should be considered in hypertensive patients at least as often as is pheochromocytoma, renovascular disease, coarctation of the aorta, hypercalcemia, Cushing's syndrome, adrenal hyperplasia, lower urinary tract obstruction, and other less common potentially curable causes of hypertension.

Searching for patients with low serum potassium concentrations is a useful screening procedure for finding patients with primary aldosteronism (1, 3). The value of this determination is enhanced if the patient's dietary sodium intake is high. George *et al.* (3) frequently found normal serum potassium concentrations in patients with primary aldosteronism on low dietary sodiums (9 to 22 mEq per day). However, the serum potassium concentrations were low in 18 of 19 patients with primary aldosteronism when dietary sodium intake was 109 to 250 mEq per day. This sodium intake can be attained if outpatients add one level teaspoon of table salt (approximately 100 mEq) to their regular diet each day for a five day period. If the serum potassium drops to subnormal levels further evaluation of the patient for primary aldosteronism is indicated.

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Presented in part at the Endocrine Meeting, St. Louis, Missouri, June 1970. Reprint requests should be sent to Dr. Nugent.

Determination of the concentration of aldosterone in plasma has been useful in separating patients with hyperaldosteronism from those with essential hypertension (4, 5, 6). Stimuli effecting aldosterone production such as high sodium intake, variation of posture, and administration of salt-retaining steroids have been used to facilitate this separation. However, using these functional tests, some overlap between the two groups has been noted and the tests require hospitalization, dietary manipulation, or medication. In addition, determination of plasma aldosterone with the only methods available before 1970 was difficult and expensive.

Saline (7) and albumin infusions (3) have been used to expand directly extracellular volume in the investigation of patients for hyperaldosteronism. These stimuli decrease urinary aldosterone excretion in normal individuals, presumably by suppressing renin production. Most patients with primary aldosteronism have a less than normal decrease in urinary aldosterone excretion in response to infusion of saline or albumin. The failure of these tests to separate clearly normal subjects from patients with primary aldosteronism and the inconvenience of repeated infusions has limited their application.

The development of a sensitive radioimmunoassay for plasma aldosterone (8) has permitted a rapid and inexpensive method for determination of hyperaldosteronemia in hypertensive patients. This study was undertaken to determine whether suppression of aldosterone by rapid saline infusion and measurement of plasma aldosterone by radioimmunoassay might provide an effective outpatient method for the diagnosis of hyperaldosteronism.

MATERIALS AND METHODS

The method for radioimmunoassay of plasma aldosterone has been published (8, 9). The method is outlined in Table 1 and a representative standard curve is shown in Figure 1. Twenty-four plasma samples can be processed by a single technician in 2½ working days. Plasma renin activity (PRA) was measured by bioassay, using the method of Gunnells (10). Serum potassium con-

TABLE 1
Outline of Radioimmunoassay of Plasma Aldosterone

Plasma (1-4 ml) + 1,2-^{3}H-aldosterone
Extract
Microcolumn
Paper chromatography
Elute
Incubate with antibody
$(NH_4)_2SO_4$ separation of bound and free
Count supernatant

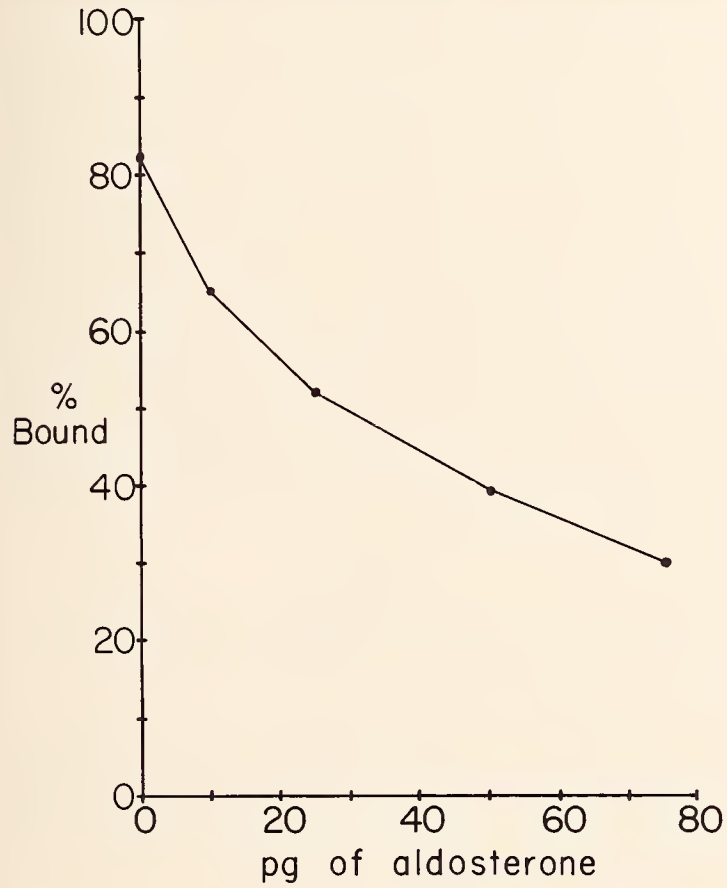


Figure 1
The percent of 1,2-^{3}H-aldosterone bound to antibody is plotted as a function of the mass (in pg) of unlabelled aldosterone in the assay tube.

centration was measured with an Auto Analyzer (Technicon).

Estrogens taken for replacement or for contraception were discontinued at least one month prior to testing. Diuretics were discontinued at least one week prior to the test. Sodium determinations on urines collected the day prior to testing were done in order to obtain an estimate of dietary sodium intake. Patients were recumbent overnight, arose at 6 a.m. and remained upright until they arrived at the laboratory at 7:30 a.m. The patients then stood for an additional 30 minutes and the first blood samples for determination of plasma aldosterone, PRA, and serum potassium were obtained at 8 a.m. Two liters of isotonic saline were then evenly infused in the recumbent patient during a 4-hour period. Repeat blood specimens were obtained at the end of the infusion.

Nine normal subjects with no history of hypertension or renal disease were used as controls. Two men and eight women with essential hypertension were studied. Identifiable causes for hypertension had not been found on investigation using history, physical examination, urine analysis, rapid sequence intravenous pyelograms, renograms, aortograms, urinary vanillymandelic acid excretion, urinary and plasma corticosteroid determinations and measurement of serum electrolyte concentrations, PRA and urinary aldosterone excretion. Patients with accelerated hypertension, diastolic blood pressures over 140 mm Hg, or congestive heart failure were excluded from this study.

Five patients with primary aldosteronism and hypokalemia were examined. After their study, 4 patients had surgical removal of an adrenal adenoma that was followed by resolution of hypokalemia, and improvement or cure of their hypertension. The fifth patient had glucocorticoid suppressible aldosteronism and has had elevation of his serum potassium concentration to normal and improvement in his hypertension while being treated with 1 mg per day of dexamethasone for 10 months.

RESULTS

The mean urinary sodium the day prior to saline infusion was 145 meq (range 51-252 mEq) in the 9 normal subjects. This value was not significantly different ($P>0.05$) from the mean of 133 mEq (range 13-383 mEq) in the 18 patients with essential hypertension.

The plasma aldosterone concentration in the normal subjects and patients with essential hypertension decreased to 5 ng/100 ml or less after recumbency and saline infusion (Table 2). The median value after the infusion of 1.5 ng/100 ml for the normal subjects was not significantly different from that of the essential hypertensive patients (median 2.1 ng/100 ml, $p>0.05$). All five patients with primary aldosteronism failed to suppress plasma aldosterone normally after infusion and recumbency. The median concentration of 21 (range 19-24) ng/100 ml after infusion in the five patients with primary aldosteronism was significantly different from that of the other two groups ($P<0.005$).

The influence of dietary sodium intake on the response to saline infusion was examined in the group with essential hypertension. The mean post-infusion plasma aldosterone concentration of patients excreting from 13-100 mEq of sodium did not differ significantly from the mean of

TABLE 2
Response to Upright Position and to Recumbency Plus Saline Infusion

		Plasma Aldosterone Concentration ng/100 ml	
		2 Hrs. Uprght	Post Infusion
	No. Pts	Median (Range)	Median (Range)
Normal subjects	9	8.9 (3.1-31)	1.5 (0.0-3.2)
Essential hypertension	18	16 (3.1-61)	2.1 (0.7-5.0)
Primary aldosteronism	5	34 (15- 60)	21 (19-24)

TABLE 3
Relation of Urinary Sodium Excretion and Response To Recumbency and Saline Infusion

Sodium Excretion Day before the infusion	Mean Plasma Aldosterone in ng/100 ml 4 hrs. Recumbent + 2L Saline
<100 mEq/day	2.5 ± 0.3 S.E.
>100 mEq/day	2.2 ± 0.3 S.E.

patients excreting 100-338 mEq per day prior to the test ($P>0.05$).

PRA was measured before and after infusion in the patients with essential hypertension. Mean values after infusion were 42% of baseline. PRA was low in the five patients with aldosteronism after standing 2 hours and even lower after the infusion.

Serum potassium concentration was not significantly altered after saline infusion in the patients with essential hypertension or primary aldosteronism. The largest drop in the latter group was 0.5 mEq/L. No diastolic blood pressure elevations greater than 15 mm Hg above the control levels were found during the infusion or in the immediate post-infusion period. Two patients noted mild headaches similar to those experienced after the onset of their hypertension. Mild analgesics controlled these symptoms.

DISCUSSION

Suppression of plasma aldosterone with saline infusion and recumbency was rapid and marked in normal subjects and in patients with essential hypertension while it was impaired in five patients with primary aldosteronism. There was no overlap in post-infusion plasma values and all patients with primary aldosteronism could be identified by means of this simple test. The concommitant suppression of PRA and plasma aldosterone is consistant with the concept that the effect of acute volume expansion on plasma aldosterone is mediated at least in part by changes in PRA. Variations in dietary salt intake prior to the test have little affect on its value. However, severe dietary sodium restriction should be avoided before the test. The test thus requires only minimal patient cooperation and can be performed in one-half day.

Measurement of urinary sodium the day before the infusion and determination of PRA and serum potassium concentration immediately before and after the infusion were done in developing this test. However, they are not necessary for interpretation of the test. This saline infusion test in recumbent patients with measurement of plasma aldosterone concentration by radioimmunoassay is a simple means for identifying patients with primary aldosteronism. Because of the limited number of patients investigated using this technique, further experience will be needed to establish its accuracy.

INDEX

Hyperaldosteronism; plasma aldosterone; saline infusion, radioimmunoassay.

REFERENCES

1. Fishman, L. M., Kuchel, O., Liddle, G. W. Michelakis, A. M., Gordon, R. D. and Chick, W. T.: Incidence of primary aldosteronism uncomplicated essential hyptertension. J.A.M.A., 205:497-502, 1968.
2. Conn J. W., Rovner, D. R., Cohen, E. L., Bookstein, J. J., Cerny, J. C., and Lucas, C. P.: Preoperative Diagnosis of Primary Aldosteronism. Arch. Intern. Med., 123:113-123, 1969.
3. George, J. M., Wright, L., Bell, N. H., Bartter, F. C., and Brown, R.: The syndrome of primary aldosteronism. Amer. J. Med. 48:343-356, 1970.
4. Peterson, R. E.: "Determination of Peripheral Plasma Aldosterone." Ed. Baulieu, E. E. and Robel, P. Oxford: Blackwell in Aldosterone, p. 145-161, 1964.
5. Brown, J. J., Davies, D. L., Fraser, R., Robertson, J. I. S., Chinn, R. H., Dusterdieck, G., Lever, A. F., Tree, M., and Wiseman, A.: Plasma electrolytes, renin and aldosterone in the diagnosis of primary hyperaldosteronism. Lancet 2:55-59, 1968.
6. Horton, R.: Stimulation and suppression of aldosterone in plasma of normal man and in primary aldosteronism. J. Clin. Invest. 48:1230-1236, 1969.
7. Espiner, E. A., Tucci, J. R., Jagger, P. L., and Lauler, D. P.: Effect of saline infusion on aldosterone secretion and electrolyte excretion in normal subjects and patients with primary aldosteronism. New Eng. J. Med. 277:1-7, 1967.
8. Mayes, D., Furuyama, S., Kem, D. C., and Nugent, C. A.: A radioimmunoassay for plasma aldosterone. J. Clin. Endocr. 30:682-685, 1970.
9. Nugent, C. A., Miyakoshi, Y., Mayes, D. M., and Kem, D. C.: Radioimmunoassay of plasma aldosterone and a progesterone binding protein, In: Proceedings of the Third International Congress of Hormonal Steroids. Exerpta Medica (In Press).
10. Gunnells, J. C., Grim, C. E., Robinson, R. R., Wildermann, N. M.: Plasma renin activity in healthy subjects and patients with hypertension. Arch. Intern. Med. 119:232-240, 1967.

INTERNAL MEDICINE IN BOLIVIA

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This paper is neither a verbal travelogue, nor a peripatetic syllabus of Bolivian disease. Our purpose is to describe a medical experience that is available to *any* physician. We would also like to emphasize the potential value of working and living in another country as an avenue for learning and teaching.

Several months ago, when we were making plans to spend the month of September 1970, as volunteer physicians in Bolivia, Doctor Alan

Gordon contacted Mr. Raul Castro of Tucson, Arizona, who served as the United States Ambassador to Bolivia during the mid 1960's.[1] Among his other comments, Mr. Castro told us that we would find Bolivia "a very lonely place." Now, after our return, we would agree that lonely describes Bolivia. It is also desolate, remote, isolated, and reminded us of what the "Twilight Zone" must be like. It is a land of striking contrasts, of clean, clear air, and of unbelievably diverse and difficult topography.

Our trip was arranged through the facilities of AMDOC, a voluntary international health agency, and we were assigned to work for the Bolivian Methodist Church.

Bolivia lies south of the equator, and farther east than most of us realize. It is one time zone east of the east coast of the United States, and lies approximately on the same longitude as the Bermuda Islands. Of the 13 countries of South America, only Bolivia and Paraguay are landlocked without direct access to the sea. The geography of Bolivia adds to its beauty, and contributes to its problems. The country is divided into three principal components. The altiplano, a high plain at approximately 12,000 to 14,000 feet above sea level stretches along the western half of the country in between the cordilleras of the Andes. To the east lies an area consisting of high mountain valleys. The easternmost part of the country, known as the Oriente, is made up of semi-tropical and jungle lowlands. History and culture bind most of the people in Bolivia to the altiplano. 80% of the four million Bolivians live at an altitude of greater than 6,000 feet above sea level. 60% live above 10,000 feet. Most of the Indian population reside on the altiplano. Repeated government attempts to resettle the Indians in the richer, more fertile eastern lowlands have been unsuccessful. Large percentages of Indians that were resettled were unable to adapt to changes in culture, diet, clothing, climate, and medical problems. The altiplano, these high plains at 14,000 feet, was the most interesting and unusual geographic area we had ever seen. Harold Osborne,[2] in his book, *Bolivia, a Land Divided*, described it as follows: "The altiplano has the forsaken aspect of a landscape on some vaster and more ancient planet where life has long been obsolete. A land where no one comes, nor hath come since the making of the world. It is a harsh, inhuman land, inhabited by a dour, unsmiling, toiling race; a high, bleak, barren, wind-swept tundra with a paradox of a tropical sun blazing through frigid air. There are no trees. Except in the brief season of the rains, there is no green. The small centers of habitation, the scattered patches of hard-won cultivation, and the occasional flocks of llamas dwarfed against the limitless flatness of ochreus gray, serve but to exaggerate the greater desolation of the whole, as though they were symbols of man's puniness in the face of organic forces too mighty for him to master. An immense dreariness of solitude stretches incredibly to the eternal barriers of the mountains on the horizon like the scene of a nightmare dream. Yet, in the very magnitude of its implacability there is a grandeur which humbles and turns one to admiration of those men who for centuries have made it their home."

Our medical mission in Bolivia was essentially unstructured. We served at the disposal of the medical missionaries, and in La Paz, at the Faculty of Medicine, at the University of San Andres. La Paz is a city of 450,000 people, and while not as cosmopolitan as many world capitals, it is a city with more than enough doctors. Bolivia, like the United States, and most other countries, has the problem of mal-distribution of physicians. There are over a thousand physicians in Bolivia; more than 600 of them are in La Paz. We spent our time in La Paz making teaching rounds at the medical school and at the Methodist Medical facility. Each of us brought prepared presentations, including a teaching exercise based on questions taken from the ACP self-assessment examination. We spoke Spanish at every opportunity and from a standpoint of good will, the fact that we had our slides translated, and were willing to give our talks, at least in part, in Spanish were gestures that our Bolivian colleagues obviously appreciated.

The second half of our trip was spent in the eastern half of the country, in the semi-tropical and jungle areas. Here we were based primarily in a small frontier community with a government hospital serving the indigent needs. From this area, we were able to make a three day trip into the jungle, to the very edge of Bolivian civilization, and during this time we were to see hundreds of patients in relatively brief periods of time. The latter experience proved to be of more cultural and social benefit than medical benefit, but it was an exciting highlight of our trip.

The Bolivian medical system is different than what most of us are used to. There is little

standardization, and very little formal organization. There are three medical schools in the country, but there are few ties that bind them other than the fact that they are medical schools. A student enrolls in the Faculty of Medicine directly after completing his secondary school education. The medical school course lasts for 7 years. There is no tuition, and the curriculum is generally unstructured. The students impressed us as being bright, interested, and not unlike medical students everywhere. Students in Bolivian universities are oriented toward political activity. The system in the universities is based on a concept of co-government. This means that all of the departments of the university are governed by the administration and the faculty on the one hand, and the students on the other hand. The students seem to be the dominant factors. Student strikes and manifestations are regular occurrences. There are those who estimate that the university is not in session because of student strikes nearly 50% of the time. A faculty member who is unsuitable to the students, regardless of his tenure or ability or inability, can be dismissed by a judgment of student leaders. There are no standardized internships or postgraduate residency programs in Bolivia. After a student successfully completes his 7 years at the university, he agrees to spend a year in one of the outlying provinces working in a relatively unsupervised capacity.

In a milieu of disorganization, the practicing internist finds himself. He usually has multiple jobs and may spend part of his time at the university, part of his time working for a labor union, part of his time in another consultant capacity, and part of his time in his office as a private practitioner. He wrestles with the problems of mal-distribution of physicians in his city, but does little, or is able to do little to correct them. If he has been out of his country to another Latin-American medical center, or the United States, or to Europe for postgraduate training, he returns to suffer varying degrees of medical-cultural shock.

The patients that we were exposed to were mostly Indian. 70% of the Bolivian population is Indian. 30% of Bolivians do not speak Spanish. The infant mortality of the indigent Indian population is staggeringly high, and we were told that only one or two out of five children born reach the age of 2 years. Accordingly, by the time individuals reach adulthood they have been naturally selected and seemed hearty and strong. The medical problems that we encountered included tuberculosis of all forms, obvious nutritional disease. and a wide spectrum of infectious diseases. Leishmaniasis, Chaga's disease, and hook worm are not uncommon. Although immunization is unusual, we were told that there is no tetanus in Bolivia. No one knew why. One of the principal crops raised in Bolivia is the coca plant, a derivative of cocaine. When mixed with another type of leaf and chewed, this becomes the sandard drug habit of virtually 100% of all adult indians in Bolivia. Coca has a somewhat numbing effect, causes hunger to abate, and makes the cold more bearable. It also produces unbelievable halitosis.

There were times when we wished we could have shared particular experiences with other physicians or especially with medical students. One consultant in a recent New England Journal of Medicine[3] recalled the experience of Alexander Portnoy, who learned that things done in solitude, though gratifying, are rarely satisfactory.[4] We attempted to arrange a trial project, utilizing two students from the University of Arizona, College of Medicine, in conjunction with and sponsored by the Arizona State Medical Association. Unfortunately, this could not be arranged, but we would submit that the opportunity for a medical student to spend a month with a literally full-time physician preceptor, living medicine in another country in a way that most of us are not used to living it, learning another language, and gaining exposure to another culture, could be a medical adventure of a life time.

What were our observations and conclusions following a trip of this nature? First of all what did we expect? What we sought was a medical experience in a totally different environment than we had been used to. We sought exposure to another culture, and we wanted to learn another language. We think that these goals were accomplished. The image of the Gringo in Latin-America is not what it should be, and certainly not what we would like it to be. We were very aware of our responsibility as represenatives of Amercian citizenry in general and American medicine in particular. Most of the benefits from a mission of this type are personal and subjective. The measure of our contribution to the health and welfare of the Indian population of Bolivia would be analagous to the quantitation of spitting in the ocean. We had no illusions about this.

There are no tangible benefits that one can measure from a trip of this nature, but we feel we had an outstanding learning experience that might enlighten us as human beings and as physicians. At any rate, avenues for foreign travel and service remain available, and to those physicians and students who might be interested, we recommend an experience of this type.

REFERENCES

1. Castro, R.: Personal Communication, July, 1970.
2. Osborne, Harold: Bolivia, a Land Divided, 3rd Edition, London, New York, Oxford University Press, 1964.
3. Case Records of the Massachusetts General Hospital (Case 37-1970). New Eng. J. Med., 283:525-35, 1970.
4. Roth, P.: Portnoy's Complaint, New York, Random House, 1967.

CLINICAL APPLICATIONS OF MEASUREMENT OF TELEMETRY OF PHASIC AORTIC FLOW VELOCITY IN MAN DURING CARDIAC ARRHYTHMIAS

A. BENCHIMOL, M.D.

It is the purpose of this paper to (1) describe the usefulness of this technique to study aortic flow velocity in man; (2) to describe the normal pattern of aortic flow velocity and its alterations in patients with a variety of cardiac arrhythmias.

MATERIAL AND METHODS

Thirty-three patients with spontaneous or induced cardiac arrhythmias were studied. Ten were normal subjects, and the remaining 23 had various types of heart disease. Cardiac arrhythmias were detected from lead II of the electrocardiogram which was recorded simultaneously with the flow velocity curves.

All 33 patients had the anatomic and physiologic diagnosis made on the basis of right and left heart catheterization, selective cineangiography, and indicator dilution curves.

Instantaneous aortic flow velocity, lead II of the electrocardiogram, the phonocardiogram, and intracardiac pressures were recorded simultaneously. The intracardiac pressures were obtained with saline filled No. 7 or 8 end-lumen catheters connected to P23Db Statham strain gage.

The number of cases with arrhythmias included: 30 ventricular extrasystoles, 21 atrial extrasystoles, 9 ventricular tachycardias, 8 with right atrial and ventricular pacing, 5 with atrial fibrillation, 2 with complete heart block, and 2 with nodal rhythm. One or more types of arrhythmias were often present in the same patient. In most instances, except for those with complete heart block and those with atrial fibrillation, the arrhythmias were of temporary nature and occurred during manipulation of catheters in the cardiac chambers.

Aortic flow velocity was obtained with a Doppler catheter (supplied by Southwest Research Institute), as developed by Stegall et al,[1] and has been previously described.

The technique is based on the Doppler shift principle.[2-7] A high frequency sound (7 to 10 megaHertz) from one crystal hemidisc is coupled to blood passing through the vascular lumen around the catheter. Part of the emitted sound is backscattered by erythrocytes and detected by the other crystal hemidisc; both are mounted on the tip of the catheter (Figs. 1 and 2). The reflected signal differs in frequency from the incident signal by a quantity which is proportional to the velocity of the target, i.e., red blood cells. Thus, the frequency shift of the backscattered sound is proportional to blood velocity; the audio frequency is transmitted via telemetry to a nearby receiving station.

Zero flow velocity was obtained by briefly disconnecting the input signal to the frequency meter, since zero frequency shift corresponds to zero velocity.

The catheter was inserted into the brachial

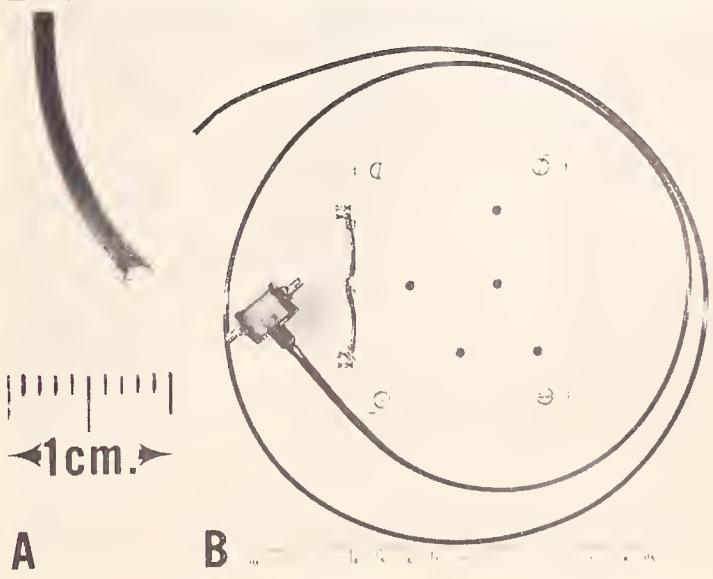


Figure 1
Catheter and Doppler Flowmeter used on this study. On the left hand side, an enlargement of the tip of the catheter is shown.

From the Institute for Cardiovascular Diseases, Good Samaritan Hospital, 1033 East McDowell Road, Phoenix, Arizona 85006.

Supported in part by the Nichols' Memorial Fund.

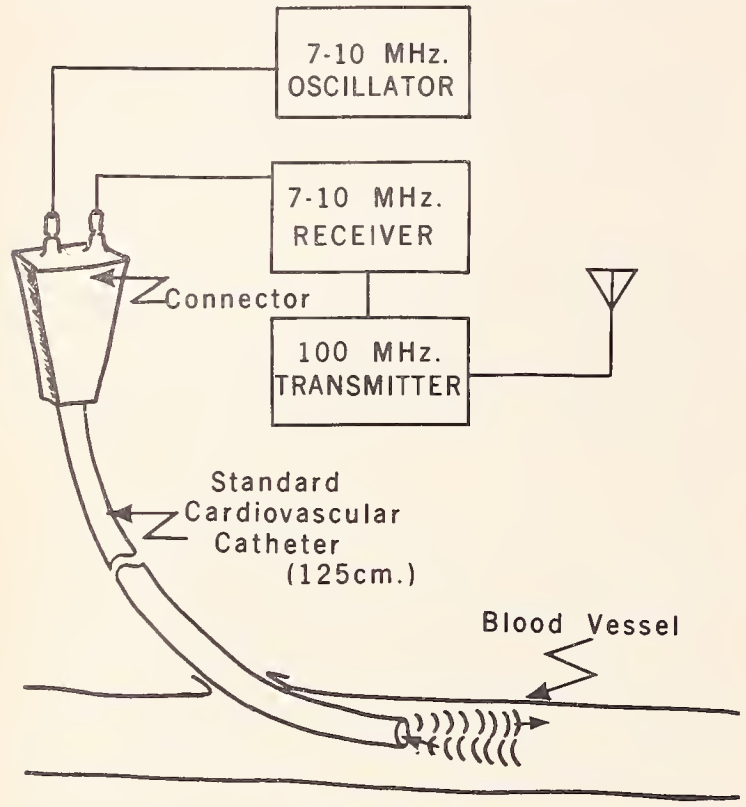


Figure 2
Diagram of the Doppler principle as applied to catheter measurement of aortic flow velocity.

artery after the vessel had been surgically exposed in the right antecubital fossa. Under fluoroscopic control, the catheter was advanced to the ascending aorta where measurements were made.

RESULTS

Normal pattern of aortic flow velocity curves. The aortic flow velocity curve in man as recorded with this technique consists of a major high frequency systolic wave related to ventricular systole. The onset of this wave follows the QRS complex of the electrocardiogram by about 0.05 second; the upstroke of this systolic wave form is normally sharp and rapid (Fig. 3), and its peak either coincides with the ascending limb of the T wave of lead II of the electrocardiogram or precedes it by a short interval. The peak flow velocity in normal subjects and with normal sinus rhythm has a short, sharp peak frequency shift in the range of 3,000 to 8,000 cycles per second [3 to 8 kiloHertz (KHz)] and is followed by a rapid downward slope which terminates at or near base line. This downslope is interrupted by a sharp notch which occurs at the time of the second heart sound of the phonocardiogram and nearly coincides in time with the dicrotic notch of the aortic pressure curve. It appears to represent the end of mechanical systole. The primary wave represents forward aortic flow velocity (i.e., peripherally directed). A secondary wave follows the primary wave, the peak amplitude of which is approximately one third or less of the primary wave; part of this secondary wave represents retrograde flow (i.e., centrally directed) as more recently measured with a bi-directional Doppler flowmeter (Fig. 4). The secondary wave

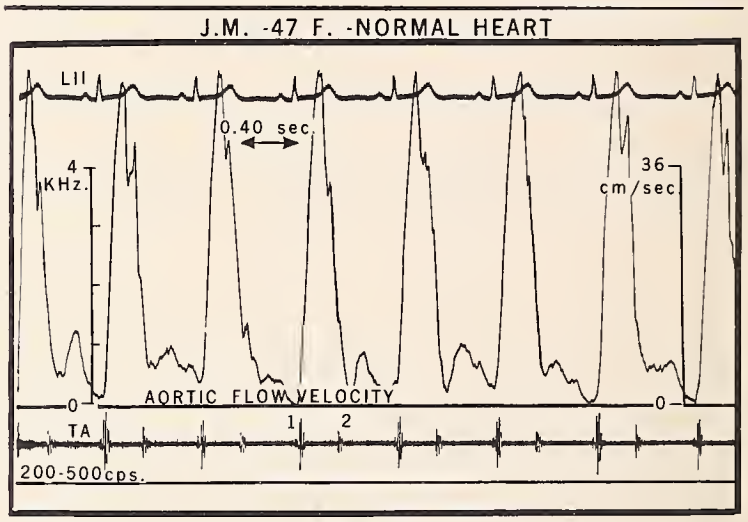


Figure 3
Lead II of the electrocardiogram, aortic flow velocity and phonocardiogram at the tricuspid area (TA) in a 47 year-old woman with a normal heart. (See text.)

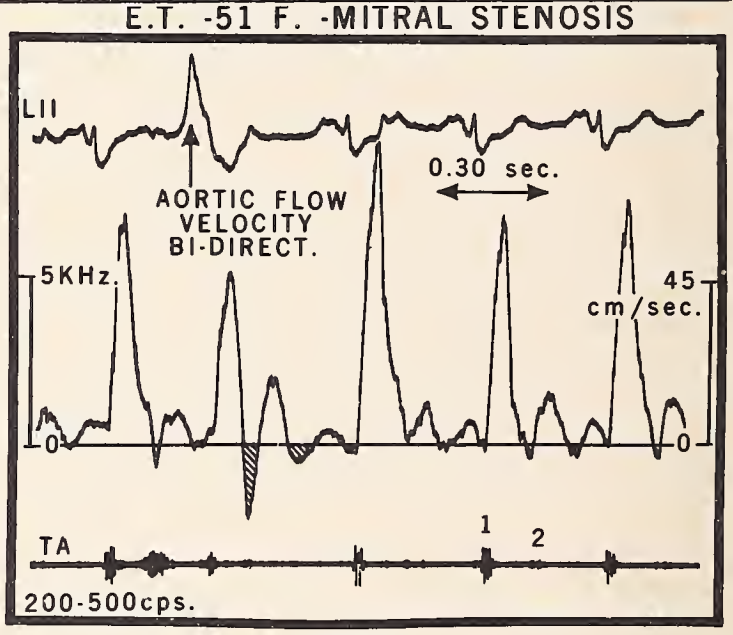


Figure 4
Lead II of the electrocardiogram, aortic flow velocity recorded with the bidirectional flowmeter and phonocardiogram at the tricuspid area in a 51 year-old woman with mitral stenosis. Zero flow velocity is properly indicated. Note that a small component of the diastolic wave represents retrograde flow (below zero line). One ventricular extrasystole is indicated by an arrow. Note that this extrasystole results in a large retrograde flow as indicated by shaded area.

ends in mid-diastole, and the record approaches base line or zero flow.

Arrhythmias.

EXTRASYSTOLES. Supraventricular or ventricular extrasystoles are associated with peak aortic flow velocity which is directly proportional to the timing of the extrasystole, i.e., the shorter the interval between the extrasystole and the preceding beat, the lower the peak flow

velocity (Fig. 5). The minimum length of time for an extrasystolic beat to result in measurable flow velocity appears to be about 0.35 second.

In about 60 per cent of the cases, the peak aortic flow velocity of the postextrasystolic beat was higher than the normally conducted pre-extrasystolic beat, and in the remaining 40 per cent of the cases it did not change appreciably. This increase in postextrasystolic peak flow velocity was independent of the site of origin of the extrasystoles. Moreover,, the lower the peak flow velocity associated with an extrasystolic beat, the higher the peak velocity associated with the subsequent beat.

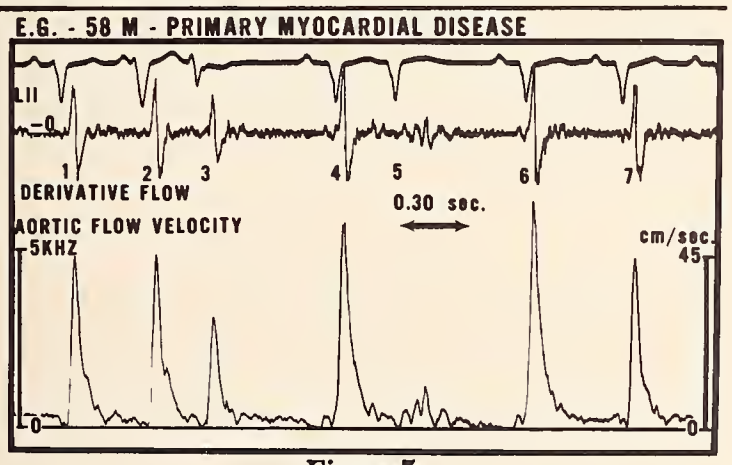


Figure 5

Lead II of the electrocardiogram, derivative of low and aortic flow velocity in a 58 year-old male with primary myocardial disease. Note that the third beat is an atrial extrasystole with aberrant conduction. This beat results in a small peak flow velocity and is followed by a pause. The next beat (Beat 4) is a normally conducted beat and demonstrates the phenomenon of postextrasystolic augmentation.

ATRIAL TACHYCARDIA. Runs of atrial tachycardia lasting from 15 seconds to 5 minutes were recorded in 7 patients during which the heart rate ranged from 120 to 250 per minute. With the onset of tachycardia, the peak flow velocity decreased from 20 to 40 per cent of control values.

In 9 patients with pacemaker-induced right atrial tachycradia, the peak aortic flow velocity remained unchanged until rates of 120 to 140 per minute had been reached, beyond which the peak flow velocity decreased by 20 to 60 per cent. This decrease was directly proportional to the heart rate. Periods of Wenckebach type rhythm, with varying degree of A-V block, occurred in all cases at pacing rates above 140 per minute. When block occurred, irregular flow velocity patterns were always seen. During heart block, the peak flow velocity after a long pause was always greater than the peak flow velocity of beats having the same cycle length as sinus rhythm (Fig. 6).

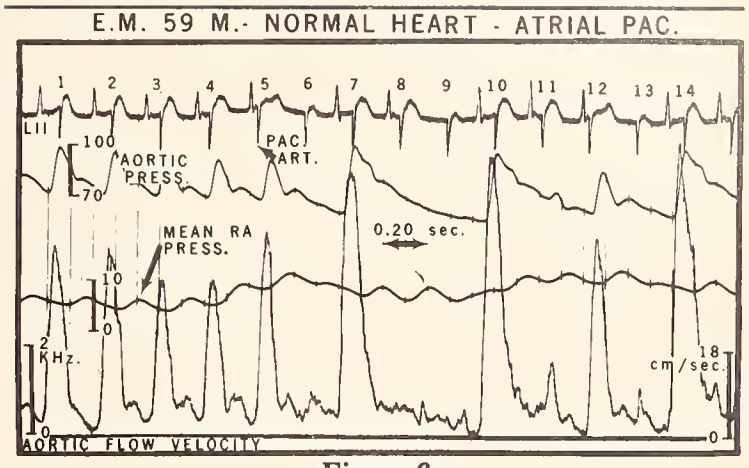


Figure 6

Lead II of the electrocardiogram, aortic pressure, mean right atrial pressure (RA) and aortic flow velocity in a 59 year-old male with a normal heart. This figure illustrates the effect of right atrial pacing on aortic flow velocity. From Beats 1 to 4, there is a normal conduction with first degree A-V block. Beat 5 is a nonconducted atrial beat demonstrating Wenckebach structure. Note that on Beat 6, the peak aortic flow velocity is markedly increased because it is preceded by a long cycle length. The same phenomenen is observed on Beat 9. (See text.)

The decrease in peak flow velocity at rapid heart rates was accompanied by a decrease in left ventricular systolic pressure, aortic or peripheral arterial pressure and by an increase in right atrial pressure.

ATRIAL FIBRILLATION. In atrial fibrillation, peak aortic flow velocity and the area under the curve varied from beat to beat (Fig. 7). These variations were directly proportional to preceding cycle length and inversely proportional to the peak flow velocity of the preceding beat (Fig. 7). Arterial pulse pressure varied with peak aortic flow velocity. These variations were most pronounced when the ventricular rate was above 120 to 140 per minute.

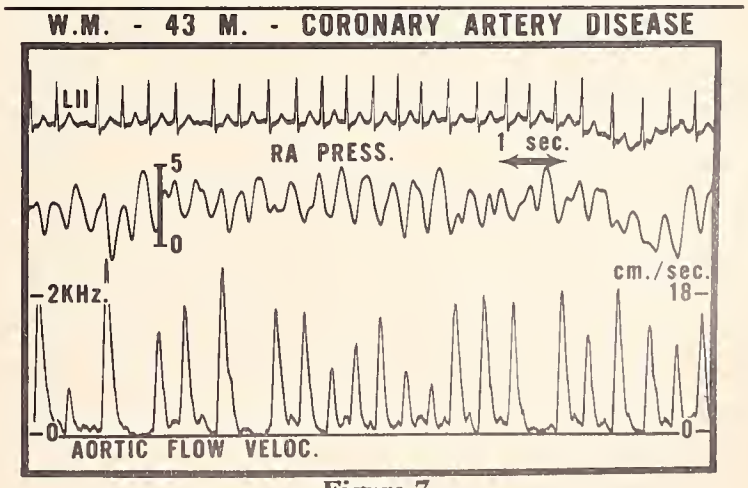


Figure 7

Lead II of the electrocardiogram, right atrial pressure and aortic flow velocity in a 43 year-old male with coronary artery disease. The basic rhythm is atrial fibrillation with variable cycle lengths. Note the irregularity of beat-to-beat peak aortic flow velocity which is related to the preceding cycle length.

VENTRICULAR TACHYCARDIA. Temporary episodes of ventricular tachycardia were re-

corded in 9 cases. The heart rates during these episodes varied from 130 to 200 per minute. With the onset of tachycardia, peak flow velocity decreased moderately (Fig. 8). If the tachycardia persisted more than a few minutes, the peak flow velocity rose slightly but remained well below the control figures. The most striking finding during this arrhythmia was the irregularity of the flow velocity pattern. Variations in beat-to-beat peak flow velocity were often as high as 80 per cent. Pulsus alternans in the arterial pressure curves occurred in the majority of cases whose rates during this arrhythmia were above 150 per minute. This was also accompanied by "alternans" in the flow velocity curves (Fig. 9).

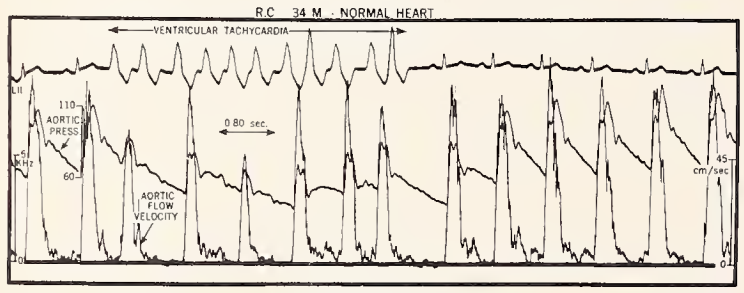


Figure 8

Lead II of the electrocardiogram, aortic pressure and aortic flow velocity in a 34 year-old male with a normal heart. During the recording, the patient developed a short episode of ventricular tachycardia which subsided spontaneously. Note irregularity of peak aortic flow velocity during this tachyarrhythmia. A number of electrocardiographic beats are not associated with any measurable aortic flow.

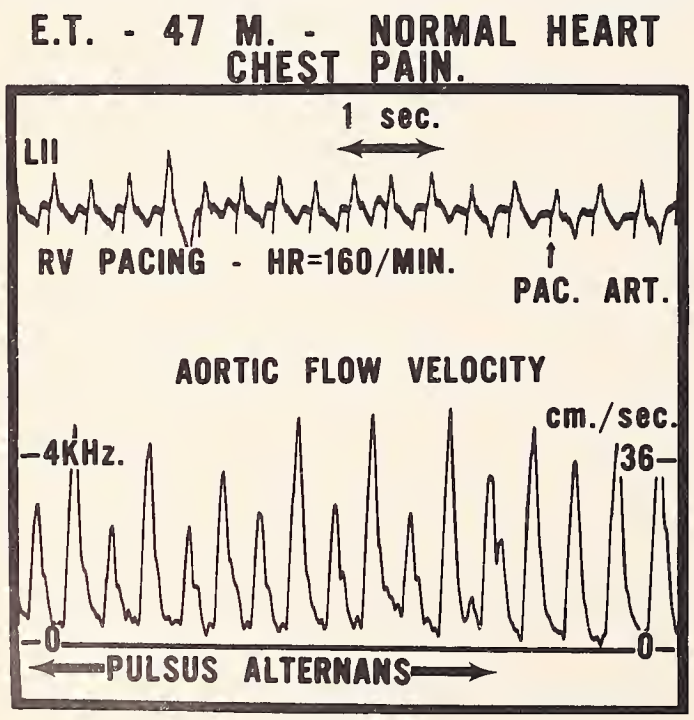


Figure 9

Lead II of the electrocardiogram and aortic flow velocity in a 47 year-old male with a normal heart and chest wall pain. This figure illustrates the effect of right ventricular pacing at a rate of 160 per minute. Note that during the recording the patient developed flow alternans characterized by high and low peak aortic flow velocities. (See text.)

With the onset of pacemaker-induced ventricular tachycardia, there was no significant change in peak flow velocity until rates of 100 to 120 per minute had been reached, beyond which there was a precipitous fall in flow velocity by about 60 to 80 per cent of the control levels. The flow velocity pattern at rates above 180 per minute was markedly irregular.

COMPLETE HEART BLOCK. Beat-to-beat variations in peak flow velocity were common in complete heart block. The peak flow velocity and the area under the curves were greater when the P wave appeared 10 to 200 msec. before the QRS complex of the electrocardiogram. Within this range of P-R interval, the peak flow velocity was 10 to 15 per cent greater than beats in which atrial contraction occurred more than 200 msec. before or during the inscription of the QRS complex.

DISCUSSION

Measurements of phasic aortic flow during cardiac arrhythmias have not been possible in man because of lack of available techniques. Most of the hemodynamic studies dealing with cardiac arrhythmias have been restricted to measurements of mean flow and to intracardiac and arterial pressures.[8] However, recently miniaturization of probes for the electromagnetic and for the Doppler ultrasonic flowmeters allowed the use of these techniques to study central and peripheral circulation in dogs and man.[9-13]

This report indicates the feasibility of obtaining measurements of phasic aortic flow velocity in man with the Doppler catheter-flowmeter system. It is apparent that this technique would be valuable in examining the hemodynamic consequences of transitory cardiac arrhythmias in conscious man.

The arrhythmias described in this report had a variety of origins. The focus of origin (ventricular or supraventricular) did not appear to influence the flow velocity pattern significantly, with the exception of ventricular tachycardia which was often associated with marked reduction in aortic flow velocity.

In the absence of appreciable changes in the status of the peripheral resistance, the principal determinants of aortic velocity are the stroke volume and the rate of ejection. An extrasystole which begins before diastolic filling is complete would eject a smaller amount of blood and peak aortic velocity would be lower as a result; since the postextrasystolic beat usually follows a some-

what prolonged diastolic interval, stroke volume is larger and peak aortic velocity is higher. The importance of timing is shown in Figs. 5 and 6: if the extrasystole (either supraventricular or ventricular) begins late in diastole, aortic velocity is relative normal, and little postextrasystolic potentiation is seen; in contrast, very early premature beats generate no measurable aortic flow and were always followed by a beat demonstrating appreciable potentiation.

The same mechanism may be responsible for the reduction in peak flow velocity seen during atrial and ventricular tachycardia, particularly when the rate exceeds 120 to 140 per minute. The shorter diastolic interval allows less time for ventricular filling, end-diastolic and end-systolic volumes fall, and stroke volume is reduced; atrial pacing in chronically instrumented dogs indicates that ventricular volumes are reduced with an increasing rate.[14]

In patients with sinus rhythm, an extrasystole occurring after a diastolic interval of 0.35 second or less caused no measurable flow velocity. However, during supraventricular and ventricular tachycardia, similar cycle lengths were capable of producing measurable (though reduced) flow velocities. The difference in the effect of cycle length in these two states is likely due to muscular potentiation of some form.[15] During atrial pacing, when atrioventricular block occurred, the diastolic interval suddenly increased, and a higher peak velocity was observed. This peak was even larger than that seen at the same ventricular rate during 1:1 conduction, suggesting that the preceding period of ventricular tachycardia had somehow potentiated more complete or rapid emptying.

During atrial fibrillation, similar cycle lengths were at times associated with different aortic velocities. In particular, peak velocity tended to be higher when the preceding beat had produced a relatively low peak velocity. This suggests that inadequate ejection leaves a relatively large stroke volume and develops a higher peak velocity. The "flow alternans" seen in patients with ventricular tachycardia might similarly be explained on the basis of alternating increases and decreases in ventricular volume. The slight increase in aortic velocity seen in complete heart block when a P wave appeared 10 to 200 msec. before the QRS suggests that an effective atrial contraction can increase ventricular and stroke volume by a small, though appreciable, amount during this rhythm.

In conclusion, this technique appears to be of value in the study of hemodynamic consequences of cardiac arrhythmias which are often transitory and difficult to evaluate with previously described approaches. It can also be used to evaluate cardiovascular functions under a variety of conditions and in other vascular beds or cardiac chambers,[16-19] its major advantages being instantaneous measurement of phasic flow velocity on a continuous basis and the exploration of the arterial and venous conduits of conscious man.

SUMMARY AND CONCLUSIONS

The influence of cardiac arrhythmias on aortic flow velocity using a Doppler catheter-flowmeter system was described in 33 patients. The arrhythmias examined included atrial fibrillation, spontaneous and pacemaker-induced atrial and ventricular tachycardias, atrial and ventricular extrasystoles, and complete heart block.

Atrial and ventricular tachycardia resulted in a reduced peak aortic flow velocity at rates above 140 per minute. Ventricular tachycardia was associated with marked irregularity in flow velocity pattern with decrease in peak flow velocity for individual beats. Variation in beat-to-beat flow velocity was seen in patients with atrial fibrillation and in patients with ventricular tachycardia; this was more pronounced at rapid heart rates.

Factors which regulate stroke volume, i.e., ventricular volume and the influence of previous contractions were discussed in the light of observations made.

It is suggested that this device may be used with caution to study instantaneous phasic aortic flow velocity in conscious man. These observations indicate its potential value in the study of cardiovascular hemodrynamics in health and disease.

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REFERENCES

1. Stegall, H. F., Stone, H. L., Bishop, V. S. and Laenger, C.: A catheter-tip pressure and velocity sensor. Proc. Twentieth Ann. Conf. Eng. Med. Biol. 27:4, 1967. (Abst.)
2. Franklin, D. L., Schlegel, W. and Rushmer, R. F.: Blood flow measured by Doppler frequency shift of back-scattered ultrasound. Science 134:564, 1961.
3. Franklin, D. L., Schlegel, W. A. and Watson, N. W.: Ultrasonic Doppler shift blood flowmeter: circuitry and practical applications. Biomed. Sci. Instrum. 1:309, 1963.
4. Van Citters, R. L. and Franklin, D. L.: The Doppler ultrasonic telemetry flowmeter. Application in animal experiments. Proc. Twentieth Ann. Conf. Eng. Med. Biol. 27:7, 1967. (Abst.)
5. Franklin, D. L.: Techniques for measurement of blood flow through intact vessels. Med. Electron. Biol. Engin. 3:27, 1965.

6. Franklin D. L., Van Citters, R. L. and Watson, N. W.: The ultrasonic Doppler shift blood flowmeter-telemetry system applications in free ranging animal experiments and as a flow monitor in humans. Digest Sixth Conf. of Med. Electron. Biol. Engin., Tokyo, 1965. (Abst.)
7. Rushmere, R. F., Baker, D. W. and Stegall, H. F.: Transcutaneous Doppler flow detection as a nondestructive technique. J. Appl. Physiol. 21:554, 1966.
8. Benchimol, A., Ellis, J. G., Dimond, E. G. and Wu, T. L.: Hemodynamic consequences of atrial and ventricular arrythmias in man. Amer. Heart J. 70:775, 1965.
9. Pieper, H. P.: Registration of phasic change of blood flow by means of a catheter-type flowmeter. Rev. Sci. Instrum. 29:965, 1958.
10. Pieper, H. P.: Catheter-tip flowmeter for coronary arterial flow in closed-chest dogs. J. Appl. Physiol. 19:1199, 1964.
11. Kolin, A., Archer, J. D. and Ross, G.: An electromagnetic catheter-flowmeter. Cir. Res. 21:889, 1967.
12. Mills, C. J.: A catheter tip electromagnetic velocity probe. Phys. Med. Biol. 11:323, 1966.
13. Alfonso, S.: A thermodilution flowmeter. J. Appl. Physiol. 21: 1883, 1966.
14. Rushmere, R. F.: Cardiovascular dynamics, ed. 2, Philadelphia, 1961, W. B. Saunders Company, p. 207.
15. Braunwald, E., Ross, J. and Sonnenblick, E. H.: Mechanism of contraction of the normal and failing heart, Boston, 1967, Little, Brown and Company.
16. Benchimol, A., Maroko, P. R., Gartlan, J. L. and Franklin, D. L.: Continuous measurements of arterial flow in man during atrial and ventricular arrhythmias. Amer. J. Med. 46:52, 1969.
17. Benchimol, A., Stegall, H. F., Gartland, J., Barreto, E. C., Goldstein, M. R. and Sandoval, J.: Right atrium and superior vena cava flow velocity in man measured with the Doppler-catheter flowmeter-telemetry system. Amer. J. Med. 48:303, 1970.
18. Benchimol, A., Barreto, E. C. and Tio, S.: Phasic right atrium and superior vena cava flow velocity in patients with tricuspid insufficiency. Amer. Heart J. 79:603, 1970.
19. Benchimol, A. Barreto E. C. and Gartlan J. L.: Right atrial flow velocity in patients with atrial septal defect. Amer. J. Cardiol. 25:381 1970.

PULMONARY FAT EMBOLISM SYNDROME: ANALYSIS OF SIX CASES WITH SEVERE RESPIRATORY FAILURE

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Following trauma, especially fractures of the long bones, and occasionally in other conditions, fat globules may appear in the capillaries of the lung, brain, and other organs, and a characteristic clinical picture known as the fat embolism syndrome ensues. The cause of fat embolism could be due to dispersion of fat from bone marrow into ruptured vessels, mobilization of fat from body stores secondary to hypovolemia[1] or a biochemical change in the blood, causing the fat to coalesce in the capillaries.[2]

Within hours, to the first few days following injury, the affected individuals will become febrile, dyspneic, anxious, have a tachycardia and may be cyanotic. In many cases, coma and bizarre neurological symptoms appear. There is usually a sharp drop in the hematocrit, abnormalities in clotting factors are detectable and elevation of the serum lipase occurs. Fat globules may be found in sputum, urine, cerebrospinal fluid and petechiae of the skin. Chest roentgenograms often show diffuse pulmonary infiltrates.[3, 4]

Only recently has it been appreciated how severe the lung injury is in this condition.[5] The extreme hypoxemia which occurs is often sufficient cause for a fatal outcome. Since the syndrome is usually self limited, survival depends on early recognition and correction of the severe hypoxemia.

During the past two years, six patients with this syndrome at the Good Samaritan Hospital in Phoenix, Arizona were seen in consultation by our chest specialty group. The features of these cases will be described in this report.

CASE REPORTS

MC

On 24 August 1970, this 46-year-old white femade was admitted to Good Samaritan Hospital, having sustained a compound fracture of the pubic symphysis, laceration of the bladder, dislocation of the right sacroiliac joint, a compound dislocation of the right hip and a simple fracture of thc right fifth rib in an automobile accident the same day. An exploratory laparotomy was done, the bladder repaired, right hip relocated and the right thigh was debrided soon after admission. It was estimated that 3000 ml. of blood was lost and 2500 ml. replaced during the operations. Blood pressure was normal and the patient seemed to be doing well postoperatively.

On 28 August temperature rose to 101°F., she became dyspneic and had rapid shallow respirations. A chest x-ray showed diffuse bilateral pulmonary infiltrates. Urine was positive for fat globules. Arterial blood gases showed a pO_2 of 23 mm/Hg., pH 7.41, pCO_2 41 mm/Hg. Nasal oxygen at 8 L/min. was administered, but on 29 August, the patient was unresponsive even to painful stimuli and there was deviation of the eyes up and down following the movement of the lids. No petechiae were seen. Coarse rhonchi were heard throughout both lung fields. A spinal tap revealed clear fluid with a pressure of 400 mm. of water. A tracheostomy was done, the patient was placed on a volume cycled respirator and given Decadron, heparin and intravenous alcohol.

On 30 August she was alert, oriented, the abnormal neurological signs were gone and she ate

a hearty breakfast. Arterial pO_2 was 74 mm/Hg. while on 60% oxygen via the respirator. On 1 September the chest x-ray was improved, pO_2 was 70 mm/Hg., pH 7.47, pCO_2 30 mm/Hg. while breathing oxygen by nasal prongs at 6 L/min. On 2 September the tracheostomy tube was removed. On 5 September pO_2 was 58 mm/Hg. on room air, oxygen therapy was discontinued and the patient had no further respiratory problems.

On 1 September urine output was 8330 ml. and on 2 September 8630 ml. serum sodium dropped to 114 but returned to normal after hypertonic saline infusions. BUN and creatinine were normal. No decrease in urinary output occurred following repeated intramuscular injections of pitressin. Water and electrolytes were replaced as they were lost and on 6 September the diuresis ceased.

Subsequent course in the hospital was uneventful, the patient receiving skin grafts to the debrided area and was discharged on 10 October 1970.

MCJ

On 26 April 1968, this 17-year-old white male sustained a closed comminuted fracture of the left elbow and a closed transverse fracture of the left femur in an automobile accident and was admitted to Good Samaritan Hospital on the same day. He remained afebrile and oriented and was taken to surgery on 28 April, where the fracture of the left femur was fixed with an intramedullary rod, but reduction of the left elbow fracture was unsuccessful. On 29 April he became markedly dyspneic and soon lapsed into coma. Temperature rose to 102° F. Pupils did not respond to light, there were bilateral abducens palsies and retinal hemorrhages. Spinal fluid examination was normal and pressure was not increased. Hematocrit dropped from 40 to 23. Platelets were adequate. Chest x-ray showed bilateral diffuse pulmonary infiltrates. Urine and sputum were positive for fat. Arterial blood gases while the patient was breathing oxygen at 10 L/min. showed pO_2 32 mm/Hg., pCO_2 33 mm/Hg., pH 7.48.

A tracheostomy was performed and the patient was placed on a respirator. He was also given intravenous hydrocortisone, heparin and low molecular weight dextran. The pO_2 rose to 158 mm/H. while on 40% oxygen on the Ohio-560 respirator using tidal volumes of 1200 ml. and inspiratory pressures of 20 cm. of water.

The following day the patient was alert, pupils were reactive to light and the abducens palsies were gone. By the 4th of May, ventilatory support was no longer required. On 9 May, arterial blood gases were normal on room air.

The elbow fracture was successfully reduced on 13 May and the patient discharged on 21 May 1968.

JDH

On 10 September 1970, this 25-year-old Negro male sustained a fracture of the right fibula and rupture of the deltoid ligament while playing football, and was admitted to Good Samaritan Hospital on the same day. He had no respiratory symptoms and admission chest x-ray was normal. He had a past history of bronchial asthma in childhood, but had not wheezed in several years.

On 11 September, the fibula fracture was reduced and the deltoid ligament repaired. A few hours after surgery the patient suddenly became very dyspneic, had marked wheezing and became unresponsive. Temperature rose to 102° F. Hematocrit dropped from 42 to 39. Platelets were adequate. Chest x-ray showed diffuse bilateral infiltrates. Urine and sputum revealed fat globules. Arterial blood gases showed pO_2, 35 mm/Hg., pCO_2, 63 mm/Hg., pH 7.23, while the patient was breathing oxygen at 8 L/min.

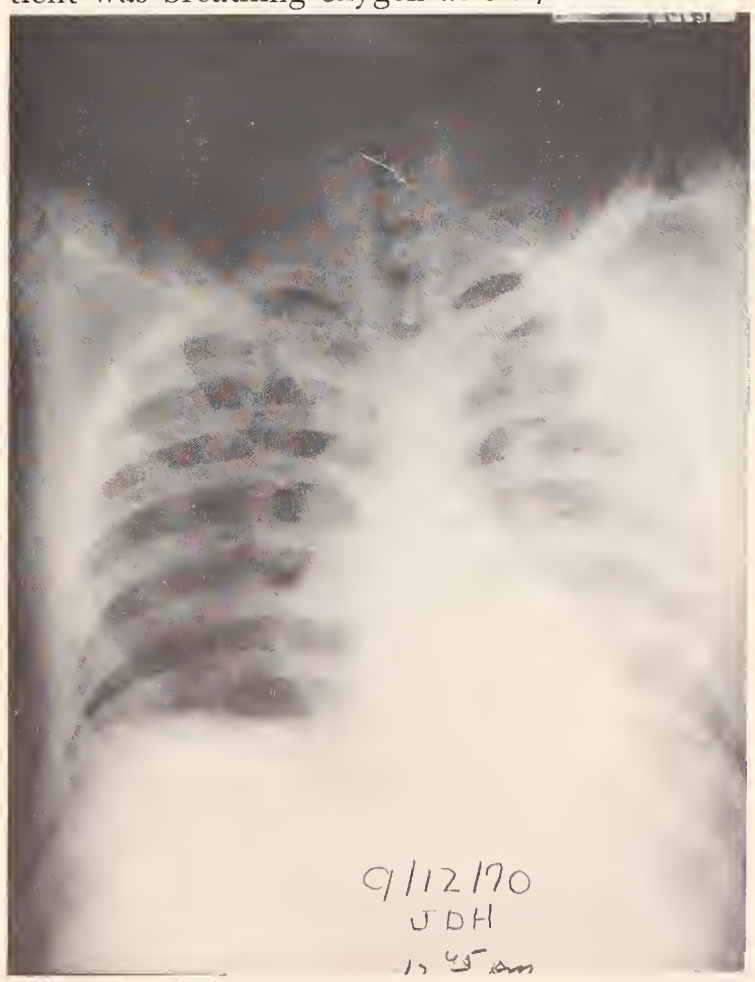


Figure 1
Patient J.D.H. – Diffuse pulmonary mottling.

He was treated with subcutaneous epinephrine, intravenous hydrocortisone, aminophylline, intravenous alcohol, intermittent positive pressure breathing with isoproterenol and oxygen was increased to 15 L/min. by mask. The patient rapidly became responsive and by the following morning was alert and in no respiratory distress. Arterial blood gases at that time on oxygen at 10 L/min. showed pO_2, 105 mm/Hg., pCO_2, 43 mm/Hg. and pH 7.44.

The patient had no further difficulties, pO_2 was 66 mm/Hg. on room air on 16 September, and chest x-ray was normal. All therapy was discontinued and he was discharged on 17 September 1970.

OPC

On 29 May 1969, this 36-year-old white female sustained a supracondylar fracture of the left femur, fractures of the sixth and seventh right ribs and a right pneumothorax in an automobile accident and was admitted to Good Samaritan Hospital. A chest tube was inserted and the fracture of the femur pinned. On the following day the right lung was re-expanded and the chest tube removed. On 31 May the temperature had risen to 102.8° F., the patient was dyspneic, disoriented and so agitated that restraints were required. The right pupil was dilated. The hematocrit which had dropped to 27 on 30 May, rose to 34 after blood transfusions. On 1 June, the patient lapsed into coma. Arterial blood gases while breathing oxygen at 7 L/min., showed a pO_2 of 24 mm/Hg., pCO_2 of 52 mm/Hg., pH 7.37. Chest x-ray showed diffuse bilateral pulmonary infiltrates. Fat globules were found in sputum and urine. Blood platelets were 62,000/mm.^{3}

A tracheostomy was done and the patient was placed on a volume respirator. Curare and morphine were required to suppress spontaneous respirations and maintain tidal volumes of 800 ml. A single dose of heparin was given. Arterial pO_2 was 102 mm/Hg. with 30% oxygen on the respirator on 2 June. On 3 June the patient was again oriented and cooperative. Her abnormal pupillary findings had disappeared. Platelets were normal on 4 June. No petechiae or hemorrhages were noted. On 6 June on room air with assisted ventilation, arterial pO_2 was 67 mm/Hg. Due to instability of the chest wall, she was kept on the respirator until 11 June when her vital capacity finally exceeded 1000 ml.

She was discharged on 3 July 1969.

CSS

On 3 April 1969, this 47-year-old white male fell from a horse, sustained a closed comminuted subtrochanteric fracture of the left femur and was admitted to Good Samaritan Hospital the same day. He was alert and vital signs and chest x-ray were normal. The fracture was reduced and the hip pinned.

On 4 April he complained of chilliness and temperature rose to 100° F. On 5 April, temperature was 102.4° F., and the patient was noted to be dyspneic, cyanotic, diaphoretic and mentally confused. Hematocrit had dropped from 45 on admission to 34. Chest x-ray was abnormal with diffuse bilateral pulmonary infiltrates and a dense consolidation in the right mid lung field. Fat globules were found in the sputum. While on oxygen by mask, at 8 L/min., arterial blood gases showed a pO_2 of 47 mm/Hg., pCO_2 of 43 mm/Hg. and pH of 7.34.

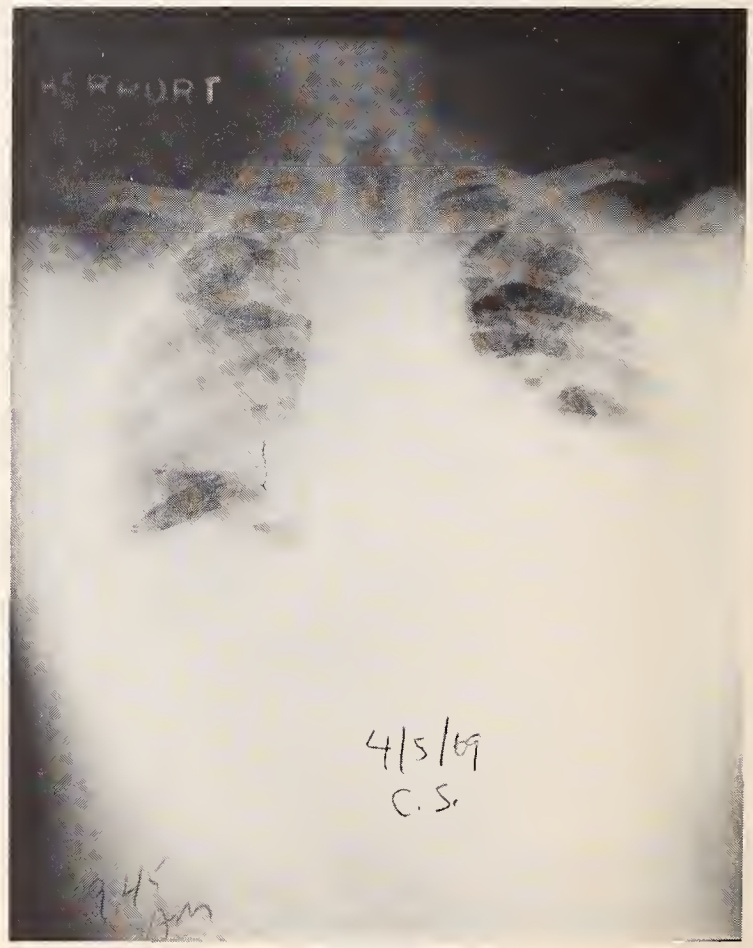


Figure 2
Patient C.S.S. — Right mid lung consolidation and diffuse nodularity.

Therapy with intravenous hydrocortisone, aminophyllin, heparin and Keflin was begun and oxygen flow increased to 14 L/min. The patient

also received intermittent positive pressure treatment with Isoprotcrenol followed by ultrasonic nebulized inhalations. Later in the day, arterial blood gases on oxygen at 14 L/min. showed pO_2 57 mm/Hg., pCO_2 mm/Hg. and pH 7.47.

From then on, pO_2 remained above 54 mm/Hg. and steadily rose so that by 18 April, pO_2 was 60 mm/Hg. on room air and oxygen therapy was discontinued. The patient's mental confusion rapidly improved. Temperature returned to normal on the tenth hospital day. A mild gastrointestinal hemorrhage occurred on 11 April. On 18 April he was transferred by air ambulance to a hospital near his home. When seen approximately a year later he had normal ventilatory studies, normal arterial blood gases and chest x-ray.

CLH

On 20 February 1970, this 18-year-old female was admitted to Good Samaritan Hospital after having sustained fractures to the right femur, tibia, and fibula; left radius, ulna, and fibula, and pubic symphysis in an automobile accident the same day. She was alert on admission and able to give a coherent history. Four units of blood were given rapidly in preparation for surgery. The patient suddenly became very agitated and had a single grand mal seizure following which she never regained consciousness. Surgery was limited to repair of soft tissue injuries, respiration being supported with positive pressure breathing. A tracheostomy was then performed and copius non-bloody, frothy sputum suctioned from the trachea.

Postoperatively the patient was placed on a Bennett MA-1 respirator, but soon developed hypercapnia, hypoxemia, and a severe metabolic and respiratory acidosis despite 100% oxygen and high inspiratory pressures. X-rays of the chest showed almost complete opacification of both lung fields. Frothy yellow secretions bubbled out of the endotracheal tube whenever the patient was taken off the respirator for suctioning. She was given intravenous curare to overcome rapid shallow respirations and placed on an Engstrom respirator with tidal volumes of 1700 ml., 100% oxygen and expiratory positive pressures of 6 cm. of water. She was also given intravenous hydrocrotisone, low molecular weight dextran and intravenous ethyl alcohol. On this treatment her arterial blood gas studies improved so that on 23 February the pO_2 was 75 mm/Hg., pH 7.41, and pCO_2 35, while on 80% oxygen on the respirator.

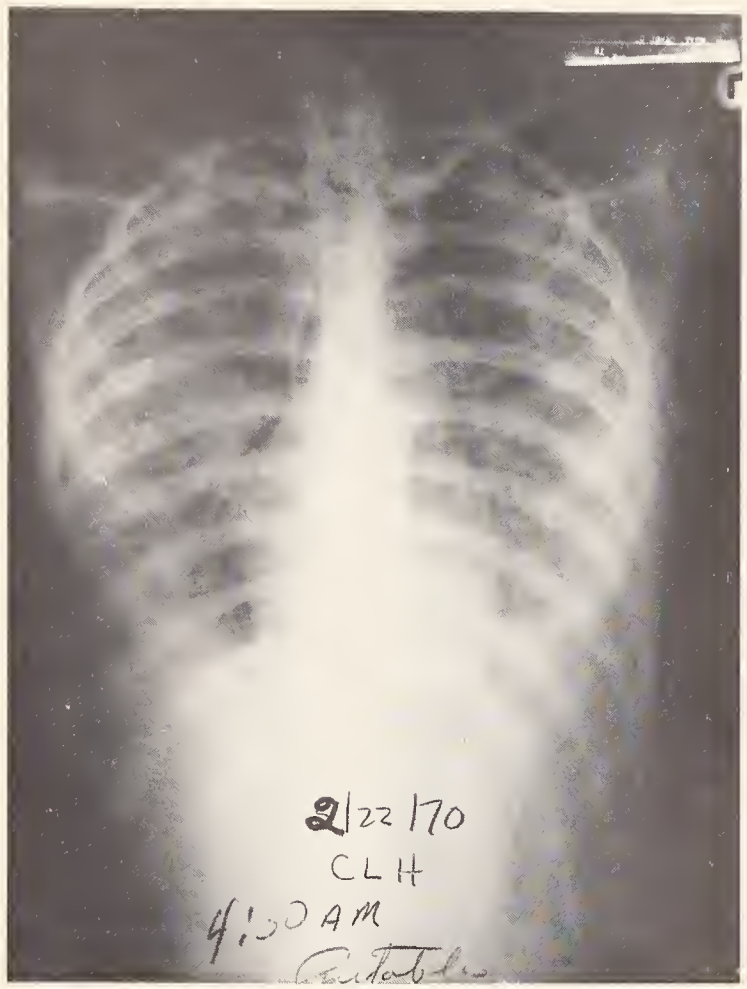


Figure 3
Patient C.L.H. — Diffuse opacification of the lungs.

Blood pressure and venous pressure remained within the normal range. Urine output repeatedly stopped for 2 to 3 hours and was then followed by a brisk diuresis each time Mannitol was given.

On 23 February, petechiae appeared diffusely over the skin, retinal hemorrhages were noted and vaginal bleeding occurred. Platelets were 17,500/mm^3. Despite treatment with Heparin and further blood transfusions, the hematocrit dropped to 23, the patient went into shock and expired on 23 February.

DISCUSSION

Fat embolism occurs in about 2% of patients hospitalized for accidental injuries. There is no particular age or sex predisposition. With single fractures it is seen most frequently after femoral shaft fractures, followed by tibial shaft fractures. Patients with combined fractures of the femur and tibia seem particularly prone to this complication.[6] Fat in the pulmonary capillaries is almost always found in patients dying after multiple injuries. Fat embolism is a major cause

Pulmonary Fat Embolism

	MC	MCJ	JDH	OPC	CSS	CLH
Age	46	17	25	36	47	18
Sex	F	M	M	F	M	F
Injuries	Fracture Pubic Symphysis Fracture Right 5th Rib, Dislocation of Right Hip & Sacroiliac Joint, Laceration of Bladder	Fracture Left Elbow & Left Femur	Fracture Right Fibula	Fracture Left Femur, 6th, 7th Right Ribs, Right Pneumothorax	Fracture Left Femur	Fracture Right Femur, Tibia & Fibula, Pubic Symphysis, Left Radius & Ulna, Left Fibula
Interval From Injury to Onset Of Symptoms Of Fat Embolism	4 Days	3 Days	1 Day	1 Day	2 Days	Less Than One Day
Fever	101° F	102° F	102° F	102° F	102° F	101° F
Fat Globules Found	In Sputum	In Urine And Sputum	In Urine And Sputum	In Urine And Sputum	In Sputum	In Urine
Lowest Hematocrit	20%	23%	39%	27%	27%	23%
CNS	Coma, Conjugate Deviation of Eyes	Coma, Abducens Palsy Bilateral Fixed Pupils, Retinal Hemorrhage	Coma	Confusion, Agitation, Dilatation of Right Pupil	Lethargy, Confusion	Convulsions, Coma
Chest X-Ray Findings	Mid and Upper Lung Field Infiltrates, Right Subcutaneous Emphysema, Fracture Right 5th Rib	Bilateral Diffuse Pulmonary Infiltrates	Bilateral Diffuse Pulmonary Infiltrates	Bilateral Patchy Infiltrates, Fracture Right 6th, 7th Ribs, Right Pneumothorax	Consolidation Right Mid Lung Field, Bilateral Pulmonary Infiltrates	Bilateral Diffuse Pulmonary Infiltrates
Initial Arterial Blood Gas Studies						
Breathing	Room Air	Oxygen 10L/Min	Oxygen 8 L/Min	Oxygen 5 L/Min	Oxygen 8 L/Min	80% Oxygen on Respirator
P_{O_2}	23	32	35	25	47	78
P_{CO_2}	41	38	63	55	43	46
pH	7.41	7.48	7.23	7.31	7.34	7.24
Treatment	Tracheostomy and Respirator, Heparin, Adrenal Steroids, I.V. Alcohol	Tracheostomy and Respirator, Heparin, Adrenal Steroids, Low Molecular Weight Dextran	Oxygen, I.P.P.B., Adrenal Steroids, Intravenous Alcohol, Aminophylline	Tracheostomy and Respirator, Heparin	Oxygen, I.P.P.B. Adrenal Steroids, Heparin	Tracheostomy and Respirator, Low Molecular Weight Dextran, Adrenal Steroids, I.V. Alcohol, Heparin
Outcome	Recovery	Recovery	Recovery	Recovery	Recovery	Expired

of death in patients who expire within the first few days of injury.

Of our six patients, four had femoral shaft fractures and one of these also had a fracture of the tibia as well as multiple other bones. These are typical predisposing injuries; that the patient with a relatively minor fracture of the fibula should have developed this complication, is unusual.

The onset of symptoms occurred in three of our cases on the first day, and one each had onset on the 2nd, 3rd, and 4th days after injury. Most patients will develop symptoms or signs of fat embolism within the first four days of injury; probably more than 90% within the first 24 hours. In patient M.C., the diagnosis of fat embolism syndrome was at first doubted, as it was thought that her symptoms occurred too later after injury to be compatible with this syndrome.

A significant drop in hematocrit over and above that seen in patients who have had injuries without the fat embolism syndrome, usually occurs. This was seen in five of the six patients in this series. Whether this represents blood loss into the tissues and may be etiologically related to fat embolization, or is due to some other process, is not clear.

Fat in the pulmonary capillaries causes a severe chemical pneumonitis. The capillaries become permeable to red blood cells and plasma, resulting in pulmonary edema and hemorrhage. This causes the typical alveolar filling pattern with diffuse pulmonary infiltrates[7, 8, 9] seen in all of our patients. It has been referred to as a "snow storm," on the chest roentgenogram. Dense localized pulmonary shadows as seen in patient C.S.S., could represent associated pulmonary

embolism, lung contusion, or superimposed bacterial pneumonia.

Some authors speak of pulmonary and cerebral fat embolism as separate syndromes, depending on whether or not there are changes in the level of consciousness and/or associated abnormal neurological findings. Fat has been found in the cerebral capillaries of patients dying from fat embolization. One author has found fat in the cerebrospinal fluid.[10] In our patient, all of whom had central nervous system signs or symptoms, no fat was found in the cerebrospinal fluid of those in whom this examination was made. Peltier has suggested that the CNS abnormalities might merely be a manifestation of cerebral hypoxemia. He noted that all of his patients had complete reversal of CNS symptoms and signs within twenty-four hours of restoring the arterial oxygen tensions to normal values.[5] Our observations would tend to confirm this, as all of our patients with the exception of L.C.H. had dramatic disappearance of coma, confusion and neurological abnormalities within 24 to 48 hours of restoring the arterial oxygen tensions to near normal values.

The degree of hypoxemia in all of the patients in this series was extremely severe. Regardless of what other damage occurred in the body, the lungs bore the brunt of the onslaught in the fat embolism syndrome, and unless measures to improve oxygenation of the arterial blood were promptly successful, a fatal outcome seemed certain. Blockage of the alveoli and airways with blood and edema fluid caused a massive derangement of ventilation-perfusion relationships comparable to the establishment of a huge veno-arterial shunt. Others who have measured arterial oxygen tensions in patients with fat embolism have found similar extremely low values.[5,6,11,12,13,14] These patients had a medical emergency and resuscitative measures had to be monitored with repeated arterial blood gas studies to be sure that they were being successful.

Although high flow oxygen was administered by mask or nasal prongs to all of the patients, in four cases inadequate oxygenation was achieved and a mechanical respirator was required. These patients all had tracheostomies performed. Since most patients who require mechanical ventilation to achieve proper oxygenation will no longer need assisted ventilation in 48 to 96 hours,[11] a cuffed endotracheal tube, rather than a tracheostomy should be the first choice. If it appears later that prolonged respiratory assistance will be necessary, a tracheostomy may be performed when the patient's condition is no longer so critical.

Inspiratory positive pressure supplied by a mechanical ventilator probably improves oxygenation by driving edema fluid out of the alveoli and restoring more normal ventilation-perfusion relationships in the lungs. In some patients with pulmonary fat embolism, unusually high tidal volumes are required. C.L.H. did not respond even though tidal volumes of 1700 ml. with 100% oxygen were used. In this patient, edema fluid shot out of the trachea when she was removed from the respirator for suctioning. It seemed as though the alveoli were filling with fluid during the expiratory phase. Adequate arterial oxygen tensions were only achieved after continuous positive pressure was applied during the expiratory as well as the inspiratory phase of respiration. One of us (B.E.L.), has previously reported this to be a useful technique for achieving satisfactory oxygenation in difficult cases.[15]

Most patients with the fat embolism syndrome have severe hypoxemia associated with a respiratory alkalosis. Four of our patients had an acidemia. C.S.S. had a mild metabolic acidosis, probably secondary to his hypoxemia, which was rapidly corrected as soon as the arterial oxygen levels were improved. O.P.C. had a flail chest and had inadequate bellows action to account for the respiratory acidosis. She required prolonged treatment on the mechanical ventilator until the chest wall stabilized. J.D.H. had a past history of asthma and developed severe airways obstruction, leading to an acute respiratory acidosis. When the bronchospasm was relieved, his carbon dioxide tension and pH returned to normal. It was several days, however, before normal ventilation-perfusion relationships were restored in the lungs and the hypoxemia disappeared. C.L.H. initially had a severe metabolic acidosis probably secondary to hypoxemia. She later developed a respiratory acidosis which responded to appropriate adjustments of the mechanical respirator. The respiratory acidosis in this case seemed to be secondary to blockage of the airways by the extremely severe pulmonary edema.

When fat becomes lodged in the pulmonary capillaries, there is mechanical blockage of flow, release of amines causing vasoconstriction and

local aggregation of platelets. Lipase hydrolyzes the neutral fat and the free fatty acids formed, cause further endothelial damage, platelet aggregation and increased capillary permeability leading to intra-alveolar edema and hemorrhage. Ethyl alcohol, being a lipase inhibitor, should theoretically have an inhibitory effect on fat hydrolysis and reduce the pulmonary insult. Heparin could be beneficial in inhibiting platelet aggregation and through its lipid clearing effect on plasma. Low molecular weight dextran could help to improve microcirculatory flow and prevent sludging in the capillaries. It is difficult to show that any of these agents is beneficial in fat embolism.[3, 4] Although most of our patients received one or more of these agents, it is uncertain what, if any, benefit was obtained. O.P.C., who received only a single dose of heparin, seemed to recover as rapidly as the other paients who received repeated doses of heparin, ethyl alcohol and low molecular weight dextran.

Corticosteroids have shown striking benefit in experimental fat embolism, increasing survival ninefold.[16] They probably exert a protective effect by reducing capillary permeability and decreasing the severity of inflammation in the lungs. The use of steroids was probably crucial in allowing patients J.D.H. and C.S.S. to recover without resorting to mechanical respiratory assistance.

Whatever the cause of fat embolization, it seems to come on and subside very quickly. No therapy seems to be needed to inhibit the process, as it is rapidly self limiting. Survival seems to depend on the severity of the injury to the lungs. If they can be made to continue to supply the body with adequate amounts of oxygen, most patients should survive. Measures designed to reduce pulmonary edema and decrease capillary permeability are therefore a logical approach to the treatment of pulmonary fat embolism. As mentioned above, adrenal steroids are indicated as they exert a very potent anti-inflammatory effect. Since the lung capillaries become highly permeable to crystalloids after fat embolism, sodium containing intravenous fluids would tend to increase pulmonary edema and should be withheld. Salt-poor albumen may increase plasma oncotic pressure and help to reduce pulmonary edema. Intravenously administered furosemide might also help decongest the lungs. All of these measures have proved useful in experimental lung injury[17] and indicate a reasonable approach to the patient with pulmonary fat embolism.

C.L.H. expired, not from respiratory failure, but from a consumption coagulopathy. Heparin was withheld in her case until generalized bleeding occurred and when administered, did not halt the process. Since this process is not uncommon in patients with the more severe forms of the fat embolism syndrome,[18] heparin might be indicated for such patients not because of its lipid clearing effect, but because of its tendency to protect against consumption coagulopathy.

SUMMARY

Six patients with fat embolism syndrome were seen at the Good Samaritan Hospital in Phoenix, Arizona between 1968 and 1970. All had respiratory failure with extremely severe hypoxemia. Two patients were successfully managed with high flow oxygen and corticosteroids. Four required mechanical respiratory support. One died of consumption coagulopathy. The fat embolism syndrome is a self-limited medical emergency which can be successfully managed by measures which maintain adequate oxygenation of the arterial blood.

BIBLIOGRAPHY

1. Fuchsig, P., Bruecke, P., Bluemel, G., Gottlob, R.: "A New Clinical and Experimental Concept of Fat Embolism." New England J. Med. 276:1192-1193 (25 May) 1967.
2. Bergentz, S.: "Studies on the Genesis of Post-traumatic Fat Embolism." Acta Chirurg. Scand. Suppl. 282, 1961.
3. Peltier, L. F.: "Fat Embolism, A Current Concept." Clin. Orthoped. Rel. Res.: No. 66, 241-253 (Sept.-Oct.) 1969.
4. Evarts, C. M.: "The Fat Embolism Syndrome: A Review." Surg. Clin. N. A. 50:493-507 (April) 1970.
5. Peltier, L. F.: "Fat Embolism: A Pulmonary Disease." Surgery 4:756-758 (Oct.) 1967.
6. Rokkanen, P., Lahdensuu, M., Kataja, J., Julkunen, J.: "The Syndrome of Fat Embolism: Analysis of Thirty Consecutive Cases Compared to Trauma Patients with Similar Injuries." J. Trauma 10:299-306 (April) 1970.
7. Tscherne, H., Schreyer, H., Magerl, F.: "Pulmonary and Cardiac Roentgenographic Findings in Traumatic Fat Emboli." Fortschr. Roentgenstr. 106:703-71D (May) 1967.
8. Acker, S. E., Greenberg, H. B.: "Pulmonary Injury from Post-traumatic Fat Embolism." Am. Rev. Resp. Dis. 97:423-428 (March) 1968.
9. Berrigan, T., Carsky, E., Heitzman, E.: "Fat Embolism: Roetgenographic Pathologic Correction in Three Cases." Am. J. Roentgen. 96:967-971 (April) 1966.
10. Cross, H. E.: "Examination of C.S.F. in Fat Embolism." Arch. Int. Med. 115:470-474 (April) 1965.
11. Wertzberger, J. J., Peltier, L. F.: "Fat Embolism: The Importance of Hypoxemia." Surgery 63:626-629 (April) 1968.
12. Collins, J. A., Hudson, T. L., Hamacher, W. R., Rokous, J., Williams, G., Hardaway, R. M.: "Systemic Fat Embolism in Four Combat Casualties." Ann. Surg. 167:493-499 (April) 1968.
13. Linscheid, R. L., Dines, D. E., "The Fat Embolism Syndrome." Surg. Cl. N. A. 49:1137-1150 (Oct.) 1969.
14. Bradford, D. S., Foster, R. R., Nossel, H. L.: "Coagulation Alterations, Hypoxemia and Fat Embolism in Fracture Patients." J. Trauma 10:307-321 (April) 1970.
15. Ashbaugh, D. G., Bigelow, D. B., Petty, T. L., Levine, B. E.: "Acute Respiratory Distress in Adults." The Lancet 319-323 (12 Aug.) 1967.
16. Wertzberger, J. J., Peltier, L. F.: "Fat Embolism: The Effect of Corticosteroids on Experimental Fat Embolism in the Rat." Surgery: 143-147 (July) 1968.
17. Bigelow, B. E., "Mechanisms of Lung Injury." Paper presented to Arizona Thoracic Society, Oct. 1970.
18. Saldeen, T.: "Fat Embolism and Signs of Intravascular Coagulation in Post-traumatic Autopsy Material." J. Trauma 10:273-286 (April) 1970.

THERAPY OF HODGKIN'S DISEASE

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INTRODUCTION

In recent years there have been advances in both diagnostic methods and modalities of treatment for Hodgkin's disease. It has become apparent that radiotherapy has prolonged survival in selected cases. The purpose of this report is to present the tools available for anatomic staging and to discuss subsequent appropriate therapy. There are still facets which are controversial and that further clinical research will clarify.

Clinicians must make the decision to employ radiotherapy or chemotherapy in each case. The details of radiotherapeutic dosage and technique will not be covered in this report. However, in the last decade megavoltage x-ray and gamma ray beams from linear accelerators, cobalt 60 tele-therapy units and other sources have made it possible to treat entire chains of lymph nodes in continuity to doses of 4,000 rads with little or no skin reaction. Megavoltage beams have relatively sharply defined lateral margins making it possible to treat safely even when adjacent to vital structures.[1] Radiotherapy alone offers the possibility of cure at this time and its employment for both clinically involved and noninvolved contiguous nodes, has been called radical radiotherapy. Chemotherapy is reserved usually for those cases in which there is no hope for cure by radiation therapy by present day criteria.

DIAGNOSTIC EVALUTION

The decision for choice of therapy for Hodgkin's disease cannot be made without adequately determining the extent of the disease in the untreated patient. This, of necessity, follows pathological diagnosis or is done concurrently prior to tissue confirmation when a malignant lymphoma is strongly suspected.

Table 1 illustrates the essential and desirable features which are ordinarily employed. The clinical history is important particularly with reference to systemic symptoms since each anatomic stage of the disease is subdivided into two categories, A or B, depending on their presence or absence. Fever, night sweats and pruritus are significant. Other manifestations such as weight loss, malaise, weakness, fatigue or alcohol pain are not sufficient to relegate a patient to a B group. The physical examination is done with particular reference to the detection and description of all palpable lymph nodes in the cervical, supraclavicular, infraclavicular, axillary, brachial, epitrochlear, iliac, inguinal, femoral and popliteal areas. The lymph nodes of Hodgkin's disease on physical examination, in addition to being palpable, are usually firm, matted, nontender and not fixed to overlying skin.

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ANATOMIC STAGING OF HODGKIN'S DISEASE

1. Careful clinical history, with special attention to systemic symptoms.
2. Complete physical examination.
3. Complete blood count, including platelet count and erythrocyte sedimentation rate.
4. PA and lateral x-ray film of chest; whole lung tomograms in the presence of hilar adenopathy.
5. Skeletal survey to include thoracolumbar spine and pelvis.
6. Retroperitoneal studies to include lower extremity lymphangiography and excretory urogram.
7. Bone marrow examination - needle biopsy.
8. Hepatic function tests.
9. Urinalysis and renal function tests.
10. Documentation of cutaneous anergy.

TABLE I

Lymphangiography has been most rewarding as an adjunct to clinical staging. Presently 25% of cases thought to be Stage I or Stage II have been shown to be Stage III by this technique.[2] The lymphatics of the dorsum of the feet are injected with suitable iodine containing organic dyes for permeation of the lymphatic systems. The nodes in question may be then visualized radiologically. Rare patients may suffer pulmonary embolic phenomena which are usually transient.[3] False positive and negatives also tend to detract from the usefulness of this tool. In addition, para-aortic nodes just beneath the diaphragm may not be visualized with lower extremity lymphangiography. Inferior cava venography may be helpful in these instances. An intravenous pyelogram should also be included.

Bone marrow biopsy should be done by the Westerman-Jensen technique in which a core of marrow is obtained in contrast to standard marrow aspirations. There is a higher percentage of positive results by this method.[4] Liver function tests should include an alkalinc phosphatase, BSP, SGOT and SGPT. Abnormalities of these should arouse suspicion of involvement of the liver and spleen. Radioactive scanning of the liver and spleen may also be utilized. Documentation of cutaneous allergy can be done with skin sensitization to dinitro-chlorobenzene to which 99% of normal individuals will develop a skin reaction. Following the preceding evaluation, patients may be staged in accordance with the Rye Conference on Hodgkin's Disease. The four anatomic stages are subdivided into A and B, depending upon the presence or absence of fever, pruritus and night sweats. Table II lists the criteria for anatomic staging.[5]

ANATOMIC STAGING OF HODGKIN'S DISEASE

STAGE I. Disease limited to one anatomical region or to two contiguous anatomical regions, on the same side of the diaphragm.

STAGE II. Disease in more than two anatomical regions or in two noncontiguous regions on the same side of the diaphragm.

STAGE III. Disease on both sides of the diaphragm, but not extending beyond the involvement of lymph nodes, spleen and/or Waldeyer's ring.

STAGE IV. Involvement of the bone marrow, lung parenchyma, pleura, liver, bone, skin, kidneys, gastro-intestinal tract or any tissue or organ in addition to lymph nodes, spleen or Waldeyer's ring.

TABLE II

THERAPEUTIC CONSIDERATIONS

Ordinarily Stages I and II are treated with radiotherapy with intent for cure. Chemotherapy for palliation is the accepted modality for Stage IV. Stage III at present is undergoing extensive study and its therapy may be considered controversial at this time and each case should be evaluated individually. Exploratory laparotomy with liver biopsy, splenectomy and lymph node biopsy is currently being evaluated.[6] This approach would have the advantage of directly determining liver, splenic and peri-aortic node involvement. It may also facilitate radiotherapy to the para-aortic nodes since shielding of the lower part of the left lung and kidney is possible with the spleen removed. Table III shows the original criteria of the Stanford University Group for this procedure. The series consisted of 65 patients. The cases were divided into groups which received prior treatment and those which had received no prior treatment. The group which received no treatment prior to this procedure consisted of 37 patients. Here hepatic involvement was suspected on the basis of clinical hepatomegaly or abnormal liver function tests which would have contraindicated radical radiotherapy. In addition, lymphangiograms which were equivocal and which prevented proper staging were another criterion. A third criterion was splenomegaly in the presence of a negative or equivocal lymphangiogram. The criteria in the 28 previously treated patients were changes in post-lymphangiogram radiographs or the size of the spleen. In addition, changes in liver function or size which suggested extension of this disease from another area already treated or recurrence in a treated site below the diaphragm necessitated documentation before beginning treatment. Five patients were operated because of symptomatic hypersplenism. In general, the studies showed that there were no

LAPAROTOMY AND SPLENECTOMY

IN STAGING OF HODGKIN'S DISEASE

I. BIOPSY PROVEN - UNTREATED

- A. Liver involvement suspected.
- B. Lymphangiogram equivocal.
- C. Splenomegaly in presence of a negative or equivocal lymphangiogram.

II. BIOPSY PROVEN - TREATED

- A. Changes in post-lymphangiogram radiographs.
- B. Change in size of spleen.
- C. Change in liver function studies.
- D. Recurrence in treated site below diaphragm.

TABLE III

major complications of the surgery under these conditions. There was a considerable degree of false positive and false negative results with regard to liver and spleen involvement. There was a general correlation observed between occurrence of systemic symptoms and extent of involvement below the diaphragm. There were no instances of liver involvement without concomitant splenic involvement. Allen, at the University of Chicago, concluded in a study of 25 patients that approximately 20% of patients thought to be Stage I or Stage II prior to this type of approach, were actually Stage III.[7] However, Coltman[8] in a study of 30 patients could show only 2 of 24 patients which turned out to be Stage III after celiotomy and this, of course, is much lower in percentage than Allen's series.

CHEMOTHERAPY

Chemotherapy for Hodgkin's disease is the usual treatment of choice for Stage IV disease. Table IV lists the usual drugs that are employed.

CHEMOTHERAPY OF HODGKIN'S DISEASE

ALKYLATING AGENTS

Nitrogen Mustard

Chlorambucil

Cyclophosphamide

Thio-Tepa

VINBLASTINE (Velban)

PROCARBAZINE (Matulan)

CORTICOSTEROIDS

COMBINATION THERAPY

BCNU

TABLE IV

The mainstay of therapy initially is nitrogen mustard as the prototype of alkylating agents. This may be given intravenously in a single dose of 0.4 mg per kilogram or in divided doses. There is usually an observable effect within two to three days and one has a significant reduction in systemic symptoms. Maximal leukopenia and thrombocytopenia usually occur between 14 and 20 days after administration. Nausea and vomiting may occur, as well as local reactions at the site of administration, if extravasation occurs. This is usually followed by oral maintenance Chlorambucil therapy. Thiotepa may be given intravenously or intramuscularly. Hospitalization is usually not required. It is useful if vomiting has to be avoided. Leukopenia and thrombocytopenia are also produced by Thiotepa, and this drug may be utilized if a rapid effect is not required. Cytoxan can be given orally or intravenously. Its chief side effects, in addition to myelosuppression, are hemorrhagic cystitis and alopecia. Cytoxan may be useful in situations where the platelets are depressed because of its relative platelet sparing effect. Velban is a plant alkaloid. It is a metaphase inhibitor. Velban is given intravenously on a weekly basis. There is bone marrow depression with this agent and it is effective in patients refractory to alkylating agents. There is not as much neurotoxicity as with its related compound Vincristine. Procarbazine shows no cross resistance to the previous two agents. It may be given orally and there may be considerable nausea and vomiting. This is currently being evaluated as a first agent to be used in the treatment of Hodgkin's disease, although it is usually reserved for patients refractory to alkylating agents and plant alkaloids. Bone marrow depression is also considerable with Procarbazine. The steroids are represented by Prednisone in the treatment of Hodgkin's disease. When Prednisone is used in high doses of 60 to 80 milligrams a day there is evidence that Prednisone has a basic effect on the disease process. However, the high incidence of secondary effects of steroids at this dosage usually precludes its use. Ordinarily it is reserved for the hemolytic anemia and thrombocytopenia of Hodkgin's disease.[9]

Of combination therapy the most familiar is the so-called "MOPP" regimen. This consists of simultaneous administration of nitrogen mustard, Vincristine (Oncovin), Prednisone and Procarbazine in 28 day cycles. Approximately 80% of patients go into remission with this regimen which may be either complete or with marked objective improvement.[10, 11, 12] Currently maintenance therapy after remission induction is being studied with ActinomycinD, Velban and Methotrexate. The combination regimens show promise of giving the longest lengths of remission that are currently under clinical investigation. BCNU is 1-3 Bis (2-Chloroethyl) 1-Nitrosourea. This compound appears to function also as an alkylating agent but has no cross resistance to Procarbazine or the Vinca alkaloids. It is usually given intra-

venously for two or three days and the patient is then observed for as long as four weeks. There is a very delayed myclotoxicity with this agent. BCNU will also cross the blood brain barrier and may find even greater usefulness in meningeal forms of leukemia and brain tumors. It is currently available on a protocol basis.[13, 14]

SUMMARY

A guide is offered for clinical evaluation and anatomic staging of Hodgkin's disease. The preferred treatment for Stage I or II is radical radiotherapy. Chemotherapy is reserved for Stage IV of the disease. Stage III is currently under intense clinical investigation and therapy at this time should be considered on an individual case basis. Current drugs and combinations useful for the palliation of Hodgkin's disease have been briefly outlined.

REFERENCES

1. Rosenberg, S. A.; and Kaplan, H. S.: Radical Radiotherapy in Hodgkin's Disease and Other Lymphomas, Proceedings of the International Conference on Leukemia and Lymphoma, Lea Febiger, Philadelphia, 1968, pp. 403-404.
2. Lee, Burton J.: Correlation Between Lymphangiography and Clinical Status of Patients With Lymphoma, Cancer Chemotherapy Reports, 52:205, 1968.
3. Abrams, Herbert L.; et al: Clinical and Experimental Studies of Pulmonary Oil Embolism, Cancer Chemotherapy Reports, 52:81, 1968.
4. Webb, Dale I.; et al: Importance of Bone Marrow Biopsy in Clinical Staging of Hodgkin's Disease, Cancer, 26:333, 1970.
5. Rosenberg, S. A.: Report on the Committee on the Staging of Hodgkin's Disease, Cancer Research, 26:1310, 1966.
6. Gladstein, Eli; et al: The Value of Laparotomy and Splenectomy in the Staging of Hodgkin's Disease, Cancer, 24:709-718, 1969.
7. Lawrence, Allen: Laparotomy and Splenectomy in Staging of Hodgkin's Disease, Clinical Research, 18:398, 1970.
8. Coltman, C. A.; et al: Celiotomy in the Staging of Hodgkin's Disease, Clinical Research, 18:610, 1970.
9. Karnofsky, David: Chemotherapy of Lymphomas, Proceedings of the International Conference on Leukemia and Lymphoma, Published by Lea Febiger, Philadelphia, 1968, pp. 409-421.
10. Luce, James K.: Personal Communication, M. D. Anderson Hospital, University of Texas, Houston, August 1970.
11. Luce, James K.; Gamble, Jess F.: Combination Chemotherapy (MOPP), Cancer Chemotherapy Reports, 53:89, 1969.
12. Stutzman, Leon: Simultaneous Versus Sequential Multiple Agent Chemotherapy of Hodgkin's Disease, Cancer Chemotherapy Reports, 53:95, 1969.
13. BCNU Clinical Brochure, National Cancer Institute, NSC 409962, Revised April 1969. Livington, Robert B. and Carter, Stephen K.
14. Lessner, H.: BCNU Effects on Advanced Hodgkin's Disease and Other Neoplasms, Cancer, 22:451-456, 1969.

NEW APPROACHES IN THE MANAGEMENT OF FULMINANT HEPATIC FAILURE

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Fulminant hepatic failure occurs infrequently. Yet, when it does, it is dramatic and particularly lethal. The fortunate few survivors may recover with completely normal liver structure and function, testimony to the remarkable regenerative capacity of the injured liver. The goal of therapy is to buy time to support patient survival long enough for regeneration to occur. Analysis of current therapy in fulminant hepatic failure is the subject of this review, with emphasis on the newer more controversial forms of treatment. In the future orthotopic hepatic transplantation may be useful in the management of such patients,[8, 23] but at the present it is not feasible, and will not be discussed further. Among the varied causes of fulminant hepatic failure are: hepatitis virus infection, halothane toxicity, toxicity of other drugs, including INH, PAS, tetracycline, carbontetrachloride, phenelzine, and acute fatty liver of pregnancy. We will not consider the problem of acute liver failure superimposed on progressive chronic liver disease.

The effectiveness of various forms of treatment have been difficult to evaluate due to the relatively few cases seen at any given center and the complete absence of any controlled studies to date. Prior to 1950, when only intravenous glucose infusion was utilized, survival data indicated virtually 100% mortality.[34] In the 1950's the recognition of the role of ammonia toxicity led to the use of protein restriction and oral neomycin therapy.[9] In addition, better general care has become possible due to an increased understanding of fluid and electrolyte management, more effective control of infection, renal and respiratory failure, and bleeding problems. (Table I) High dose glucocorticosteroids have been used since the early 1950's[14, 5] but there is no data available supporting its effectiveness. (Table II)

Table 1
Conventional Treatment of Fulminant Hepatic Failure

1. Protein restriction
2. Glucose administration
3. Oral neomycin
4. Enemas
5. Parenteral vit K
6. Treatment of complications:
 - Electrolyte imbalance
 - Infection
 - Airway obstruction
 - Respiratory failure
 - Bleeding
 - Renal Failure

Table 2
Treatment of Unproven Value in Fulminant Hepatic Failure

1. Glucocorticosteroids
2. Arginine glutamate
3. Peritoneal or hemodialysis
4. Human growth hormone

Arginine glutamate and other related compounds have been used in an attempt to lower serum ammonia without significant increase in survival. Both peritoneal and hemodialysis reduce serum ammonia and bilirubin, but there has been no correlation with improvement in consciousness or survival.[15, 18] Human growth hormone promotes liver cell replication in animals. Its value in man has not been possible to evaluate.

I would like to now proceed to newer methods of treatment which have attracted much recent attention. (Table III)

Table 3
Newer Approaches In Treatment of Fulminant Hepatic Failure

1. Exchange transfusion
2. Extra corporeal liver perfusion
3. Cross circulation in man
4. Cross circulation with the baboon

EXCHANGE TRANSFUSION

In 1958 Lee and Tink[17] presented a detailed account of exchange leading to recovery in a thirteen year old boy. Eight years later Trey **et al.** described five recoveries in seven patients,[24] and Berger reported the dramatic recovery of a physician in whom death appeared inevitable.[2] The stage was then set for the subsequent widespread uncontrolled application of the technique throughout the world.[1, 3, 9, 13, 16, 21] The presumptive justification for its use is that circulating "toxic substances," presumably protein-bound and non-dialysable, may be removed and "beneficial substances," such as clotting factors and other unknown factors, may be added by the exchange. This is very speculative. Indications to begin an exchange transfusion have been Stage 3 or 4 coma, with failure to improve clinically over 12 to 24 hours of intensive conventional treatment, usually including high doses of corticosteroids. Only patients with potentially reversible liver disease are treated.

The patient's blood is rapidly withdrawn from a catheter in the femoral or bracheal artery and, simultaneously, heparinized fresh whole blood at body temperature is rapidly replaced into a large vein. In an adult a single exchange consists of ten to twelve units, estimated to replace 80% of the patient's blood volume, administered over a two to three hour period.[1] Protamine sulfate is routinely given following each exchange to neutralize the effect of heparin.

Results of exchange transfusion have been difficult to access. Frequently patients improve their state of consciousness only to die subsequently of relapse of coma, sepsis, massive bleeding, or other complications. Interval improvement, although desirable, may not be adequate justification for the use of exchange transfusion unless overall survival is increased.

Rivera **et al.**[21] recently reviewed the survival in all reported cases of exchange transfusion. This included 97 patients, 33 (or 34%) of whom were long term survivors. These figures were compared to reports of survival of 263 patients since 1951 not treated with exchange. In this group 51 (or 19.3%) recovered. Of those, 147 received steroids with a selected survival of 25.1%. Of the initial 142 patients reported to the Fulminant Hepatic Failure Surveillance Study, 48 had no exchange procedure, 10.4% survived. 94 patients had had exchange procedures, 19.1% survived.[19] Presently, survival data is not statistically significant, and the value of exchange remains uncertain.

Awakening from coma may occur spontaneously, as well as is seen after an exchange. Whether this in itself increases the likelihood of survival is not clear. Davis **et al.**[9] indicated that the most striking difference between patients who survived and those who died was in liver histology. In all those who died, autopsy showed almost total liver cell necrosis. Survivors showed features of regeneration.

It may be presently concluded that the advantage of an exchange transfusion is the simplicity of the method, which could be available to all medical centers. Disadvantages are depletion of blood bank supplies in hospitals and the expense and manpower consumed in a procedure which may not yet be proven effective, the chance of hepatitis transmission estimated at 4% with each exchange, and risk of transfusion incompatabilities.

HETEROLOGOUS LIVER PERFUSION

In 1965, Ben Eisman **et al.**[10, 11] reported in eight patients with terminal hepatic coma, a successful method of perfusing blood through an extra corporeal pig liver. Subsequently, many teams have continued work in animals, and at least nine groups have used the technique in patients.[25] Most of the patients reported have had terminal alcoholic cirrhosis, and data on improvement in survival is impossible to evaluate. Eisman reports one-half of the alcoholic population treated showed temporary response, but in the long

run failed to regenerate sufficiently to survive. As of the last report, eight patients have been long-term survivors of a total of 45 studied.[20] No difficulty with sensitivity reactions, either in initial or repeat perfusions, have been reported.

The excised pig liver is washed free of its cells with iced Ringer's lactate, kept hypothermic, and placed in a sterile perfusion chamber. Scribner shunts are inserted in the patient within 24 hours of perfusion. Blood is perfused via hepatic artery and portal vein as rapidly as possible, achieving a flow of 500 to 1200 ml per minute. The duration of perfusion has been limited to 4 hours.

It is obvious that this technique requires more evaluation if it is to be used generally in fulminant hepatic failure. The pig liver has proven an efficient substitute in clearing ammonia and bilirubin, metabolising carbohydrate, and excreting human bile salts.[12] The technique is complex, requiring a well trained team for its performance. The liver will function only for a few hours when perfused, and there may yet be unrecognized immunological dangers to the patient.

HUMAN CROSS CIRCULATION

In 1965, Burnell **et** al.[28] reported treating a 21 year old female with fulminant hepatic failure by continuous cross circulation with a human volunteer. Two cross circulation procedures totaling 600 Liters, lasting 11 and 39 hours, were performed with recovery from coma, although the patient died 21 days later of bleeding duodenal ulcer. At least three other cases have been treated by human cross circulation.[7] One dramatic recovery was reported by Burnell in 1967, in which a 43 year old female with fulminant hepatic failure, secondary to halothane, received a series of fifteen circulations totaling 190 Liters over 10 days, first with her husband, and subsequently her father. Untoward reactions in donors have been transient urticaria, fever, thrombocytopenia, bronchospasm, hyptertension, serous effusion, felt to be immune reactions; hypertension thought due to imbalance in circulation was controlled by application of flow control clamps at both ends of the catheters.

Using a 12 inch silastic tubing to cross-connect the arterial and venous cannulas of the respective Quentin Scribner shunts, the cross circulation can be performed without anticoagulation and a flow rate of 200 ml per minute may be achieved by arterial pressure, without need of external pump. Placing the patients on scales allows precise control of circulatory balance.

Observations of man and animal suggest that the procedure can be carried out safely in patients with normal immune mechanisms for 4 to 5 days. Longer periods significantly increase the likelihood of untoward immunologic reactions. In addition, the obvious danger of transmission of hepatitis to the volunteer must be considered. A cross circulation in patients with fulminant hepatic failure, secondary to halothane or other drugs, may be less difficult to justify.

The relatively few cases studied suggest cross circulation to be far more effective than exchange transfusion in immediate relief of coma and correction of biochemical abnormalities. There is, in addition, the advantage of requiring only a single donor with considerably less risk of transmitting hepatitis to the patient, and less strain on the blood bank.

CROSS CIRCULATION WITH THE BABOON

The newest reported method has been the cross circulation between man and baboon, first reported by Bosman and Saunders **et al.** in 1968.[22] A 29 year old female with fulminant hepatic failure, presumed secondary to viral hepatitis, remained comatose for 7 days, despite 6 exchange transfusions. On the eighth day, high brain stem dysfunction became apparent, with loss of spontaneous respiration. As a desperate measure, cross circulation with a baboon was performed. The baboon's circulatory blood volume was completely washed out with Ringer's lactate under hypothermia, and subsequently replaced with human blood at body temperature. The baboon tolerated hemodilution and hypothermia well, and appeared unaffected by replacement of its blood with fresh human blood. The patient was connected to the baboon via Scribner shunts and cross circulation was maintained for 6 hours.

After 60 minutes of cross circulation, spontaneous breathing returned. There was no evidence of immediate or late abnormal immunologic response or harm to the patient. After the treatment, the patient made a steady recovery, became fully conscious, and oriented with no residual abnormal neurologic findings. Her long term follow-up has not been reported. No further reports are yet available in the literature,

but work is now continuing to evaluate this method of treatment.

SUMMARY

The prognosis is very poor in fulminant hepatic necrosis and conventional treatment is usually inadequate. In view of the great potential for hepatic regeneration, new methods are needed for sustaining life during this critical period. Exchange transfusion has had limited success in increasing survival, but encouraging reports of temporary improvement of mental status in many patients justifies further clinical trials. A definitive control study is needed. Heterologous liver perfusion has had insufficient trial for adequate evaluation, but presents such technical difficulties that its application appears limited. Human cross circulation may be justifiable in liver failure caused by a drug or toxin, but ethical considerations limit its application in patients with presumptive viral hepatitis. Cross circulation with a baboon deserves further study and may prove an effective and practical means of sustaining life in the critical period preceding hepatic regeneration.

REFERENCES

1. Berger, R. L., and F. Stohlman, Jr.: Evaluation of blood exchange in treatment of hepatic coma. Amer. J. Surg. 112:412, 1966.
2. Berger, R. L., Liversage, R. M., Chalmers, T. C., Graham, J. H., McGoldrick, P. M., and F. Stahlman: Exchange transfusions in treatment of fulminant hepatitis. NEJM 274-497, 1966.
3. Berger, R. L., Stanton, J. R., Liversage, R. M., McGoldrick, P. M., and F. Stohlman: Blood exchange in the treatment of hepatic coma. JAMA 202:119, 1967.
4. Berger, R. L., Liversage, R. M., Chalmers, T. C., Graham, J. H., McGoldrick, P. M., and F. Stohlman, Jr.: Exchange transfusion in massive hepatic necrosis. Gastroenterology 54:171, 1968.
5. Bitt, D. J., Whelan, G., Werner, D. J., Eigenbrodt, E. H., Schenker, S., and B. Combes: Acute hepatic necrosis with stupor or coma. Medicine 48:151, 1969.
6. Burnell, J. M., Thomas, E. D., Ansell, J. S., Cross, H. E., Dilard, D. H., Epstein, R. B., Esbach, J. W., Hogan, R., Hutchings, R. H., Malutsky, A., Ornsky, J. W., Poffenbarges, P., Schribner, B. A., and Volwiler, W.: Observations on cross circulation in man. Amer. J. Med. 38:832, 1965.
7. Burnell, J. M., Dawborn, J. K., Epstein, R. B., Gutman, R. H., Leinboch, G. E., Thomas, E. D., and W. Volwiler: Acute hepatic coma treated by cross circulation or exchange transfusion. NEJM 276:935, 1967.
8. Calne, R. H.: Liver transplantation. Gut 9:262, 1968.
9. Davis, M. A., Peters, R. L., Redeker, A. G., and Reynolds, T. B.: Appraisal of the morality in acute fulminant viral hepatitis. NEJM 278:1248, 1968.
10. Eiseman, B., Liem, D. S., and F. Raffucci: Heterologous liver perfusion in treatment of hepatic failure. Ann. Surg. 162:329, 1965.
11. Eiseman, B.: Treatment of hepatic coma by extracorporeal liver perfusion. Amer. Royal College of Surgery, England. 38: 329, 1966.
12. Hardison, W. G., and J. C. Norman: Ex Vivo pig liver perfusion for acute hepatic failure. Bile salt composition of pig bile during perfusion. Medicine 46:97, 1967.
13. Jones, E. A., Clain, D., Clink, H. M., MacGilivray, M., and S. Sherlock: Hepatic coma due to acute hepatic necrosis treated by exchange transfusion. Lancet 2:169, 1967.
14. Katz, R., Velasco, M., Klinger, J., and H. Alesandri: Corticosteroids in the treatment of acute hepatic coma. Gastroenterology 42:258, 1962.
15. Kiley, J. E., Pender, J. C., Welch, H. F., and C. S. Welch: Ammonia intoxication treated by hemodialysis. NEJM 259:1156, 1958.
16. Krebs, R., and M. Flynn: Treatment of hepatic coma with exchange transfusion and peritoneal dialysis. JAMA 199:430, 1967.
17. Lee, C., Tink, A.: Exchange transfusion in hepatic coma: Report of case. Med. J. Australia 1:40, 1958.
18. Nienhuis, L. I., Mulmed, E. K., and Kelly, J.: Hepatic coma, treatment emphasizing merit of peritoneal dialysis. Amer. J. Surg. 106:980, 1963.
19. Popper, H., and Schaffner, F.: Progress in Liver Disease (Grune and Stratton, N. Y.), III:282, 1970.
20. Read, A. E.: The liver, Proceedings of the 19th Symposium of the Colson Research Society (Butterworths, London), p. 279, 1967.
21. Rivera, R. A., Slaughter, R. L., Boyce, H. W.: Exchange transfusion in the treatment of patients with acute hepatitis in coma. Amer. J. Dig. Dis. 15:589, 1970.
22. Saunders, S., Terblanche, J., Bosman, S., et. al.: Acute hepatic coma treated by cross circulation with a baboon and by repeated exchange transfusions. Lancet 2:585, 1968.
23. Starzl, T. E., Groth, C. G., Butlschneider, L., Moon, J. B., Fulginiti, V. A., Colter, E. K. and Porter, K. A.: Extended survival in 3 cases of orthotopic homotransplantation of the human liver. Surgery 23:549, 1968.
24. Trey, C., Burns, D. G., and Saunders, S. J.: Treatment of hepatic coma by exchange blood transfusion. NEJM 274:473, 1966.
25. Watts, J., Mc., K., Douglas, M. C., Dudley, H. A. F., Curr, F. W., and Owen, J. A.: Heterologous liver perfusion in acute hepatic failure. BMJ 2:321, 1967.

The following four papers were submitted by house officers from Phoenix area hospitals and one medical student:

Glucagon in Refractory Heart Failure
Rex Hulsey, M.D.
Good Samaritan Hospital
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Phenformin and Lactic Acidosis
Joel Futral, M.D., and Nicholas Anton, M.D.
St. Joseph's Hospital
Phoenix, Arizona

An Interesting Case of Zollinger - Ellison Syndrome
Surin Chaitoughchawong, M.D.
Good Samaritan Hospital
Phoenix, Arizona

Pulmonary Fibrosis In Pigeon Breeder's Disease
James Heywood — Medical Student
College of Medicine, University of Arizona, Tucson

Doctor Hulsey was awarded a fifty dollar prize for the best paper by a house officer and James R. Heywood was awarded a fifty dollar prize for the best scientific paper by a medical student.

GLUCAGON IN REFRACTORY HEART FAILURE

REX HULSEY, M.D.

Glucagon is well known for its usefulness in hypoglycemia and recently the inotropic and chronotropic effects have been demonstrated with the use of isolated heart muscle,[1, 2] heart-lung preparations,[2] and the intact animal.[3] Enhancement of myocardial function in patients with heart disease has been reported by several investigators,[4, 5] they have suggested that glucagon might be useful in refractory heart failure and low cardiac output states. As there are very few clinical reports on the use of glucagon, the purpose of this paper is to present a case of refractory heart failure and digitalis intoxication showing the clinical response to intravenous glucagon.

INTRODUCTION

Glucagon has been studied since 1956 and has been found to be produced chiefly by the alpha cells of the pancreas and to be composed of a single chain of twenty-nine amino acids. The known effects in man include the following:

(1) Inhibition of gastrointestinal motility.[8]
(2) Enhanced urinary excretion of inorganic electrolytes.[9]
(3) Stimulation of free fatty acid release by adipose tissue.[10]
(4) Stimulation of adrenal medullary secretion.[11]
(5) Stimulation of insulin secretion.[12]
(6) Stimulation of hepatic gluconeogensis.[13]
(7) Stimulation of hepatic glycogenolysis.[14]
(8) Enhanced myocardial performance.[15]

Because glucagon was known to be a stimulator of hepatic adenyl cyclase,[14] and since the beta effects of the catecholamines on the heart muscle were held to be mediated through the cardiac adenyl system (adenyl cyclase), several investigators studied the myocardial response to glucagon. Both a positive inotropic and a positive chronotropic effect were found to be produced in isolated cardiac muscle,[1, 2] heart-lung preparations,[10] and the intact animal.[2, 15] Recently the effects of varying dosages of glucagon administered during diagnostic cardiac catherizations have been reported.[4, 5]

Parmely et al, in a study of twenty-one patients, demonstrated increases in the heart rate, maximum rate of left-ventricular pressure development (dp/dt), systolic ejection rate, and cardiac index. There was no change in the LVED (left-ventricular end diastolic pressure), but the systemic vascular resistance was lowered. Their results were also obtained in fully digitalized patients, but unlike the catecholamines, no evidence of myocardial irritability was noted when there was an increase in myocardial contractility. The onset of action of glucagon was one to three minutes after intravenous infection, it became maximal in five to seven minutes and lasted for fifteen to twenty minutes. Though Klein[17] and Williams[18] both have reported the same results, Greenberg et al at Mayo Clinic did not.

As would be expected blood glucose levels increase during the administration of glucagon along with lowering of the serum potassium levels. Williams' studies showed that the glucose level rose to a maximum of one and a half times the control levels but no higher.[18] The potassium level dropped an average of 0.8 ME/L but was not associated with any evidence of myocardial irritability.

Although the exact mechanism of the action of glucagon can not be entirely outlined, the results of the investigations indicate that glucagon may be useful in the management of refractory cardiac failure. The studies of Puri et al in experimental myocardial infarction in dogs suggest that it may also be useful in cardiogenic shock.[3]

CASE HISTORY

A seventy-six year old white male with severe emphysema, chronic bronchitis, diabetes, and known heart disease was admitted because of severe respiratory distress. His present symptoms dated back five to seven days prior to admission and was characterized by cough and dyspnea without fever. Two days prior to admission he began having episodes of chest pain along with nocturnal dyspnea. For the twenty-four hours prior to admission the pain was more severe with radiation to the left arm and was associated with marked respiratory distress.

Physical examination revealed an elderly white male in marked respiratory distress with diaphoresis. Vial signs: BP 180/110, Pulse 140, Respirations 40, Temp. 99°. Examination of the neck revealed marked jugular venous distention with a prominent A wave. There were scattered

wheezes and rhonchi throughout both lung fields indicating pulmonary edema. On cardiac examination the heart sounds were distant with no murmurs but a gallop rhythm was present. The liver was enlarged but no peripheral edema was noted. Chest x-ray showed marked cardiac enlargement with early pulmonary edema. Electrocardiograms were consistent with an old anterior septal infart, myocardial ischemia and digitalis effect.

On admission to the emergency room, this patient was given conventional therapy consisting of aminophylline, lasix, cedilanid, demerol and nasal oxygen. His initial response was good with a rapid diuresis and clearing of the pulmonary edema. However, he continued to have recurrent episodes of substernal pain with associated dyspnea, despite adequate diuretic therapy and digitalis. On the eighteeth hospital day he was again in pulmonary edema with no further response to diuretics and digitalis. Chest x-ray revealed bilateral infiltrates and pleural effusion. EKG showed increased digitalis effect. He was then given glucagon 3 mgm. intravenous hourly. With this therapy there was a rapid increase in the urinary output and a gradual resolution of the respiratory distress. Though glucagon was discontinued in ninety-six hours, he continued to show improvement and was able to be discharged in two weeks on maintenance digitalis and diuretics.

DISCUSSION

The results in this case indicate that glucagon is an effective agent in improving myocardial function when conventional therapy has failed. The prompt response as shown by the diuresis and the clearing of the pulmonary edema indicated improvement in the cardiac function with resulting increased renal blood flow. There was no evidence of increased myocardial irritability and no significant changes in the blood sugar or blood postassium levels even though the patient was a mild diabetic. Similar responses were reported by Brogan, who administered glucagon by continuous intravenous infusion for periods up to thirteen days.[7] He observed no significant changes in blood pressure, pulse rate, blood sugar or blood potassium levels. One important consideration in long term glucagon therapy is that a new normoglycemic state may be reached and acute hypoglycemia may occur if the glucagon is abruptly discontinued. Wilchen's report included cases of cardiogenic shock following open heart surgery and myocardial infarction in addition to refractory heart failure.[6] In one of his patients direct observation of improved myocardial contractility was noted at thoracotomy[6] after intravenous infusion of glucagon. The only side effect noted was nausea and this was present only at the higher dosages.

Now it seems firmly established that glucagon has a positive inotropic and chronotropic effect on heart muscle.[1, 2, 15] The precise biochemical mechanism for these effects are uncertain at the present. The initial hypothesis that glucagon and adrenalin share a common pathway (adenyl clycase system) was advanced[19] with glucagon either increasing circulation catecholamines or by acting on specific beta receptors in the myocardium. This is supported only by indirect evidence that they both have been shown to stimulate adrenal medullary secretion and promote hepatic glycogenolysis by the same pathway (adenyl-cyclase).

Other investigators have not agreed with this postulation since the catecholamines are effectively blocked by propanolal and glucagon is not at therapeutic dosage (3 to 5 mgm.)[16, 20] Likewise prior treatment with reserpine, to deplete catecholamine stores or blockage of alpha receptors with dibenzylene,[20] failed to alter the positive effects of glucagon. In addition, unlike the beta effects of the catecholamines, glucagon did not produce any signs of myocardial irritability in man or animal.[4, 5, 16, 20] These observations indicate that the cardiostimulant effects of glucagon are independent of the beta adrenergic system.

SUMMARY

The main conclusion that can be drawn from these observations and reports is that glucagon may be used in the therapy of clinical conditions other than hypoglycemia. It has produced beneficial improvement in refractory heart failure unresponsive to conventional therapy, cardiogenic shock secondary to cardiac surgery and myocardial infarction, and myocardial depression secondary to beta adrenergic blocking agents. The only side effects noted were nausea which was dose related and no evidence of any untoward reaction or cardiac arrhythmias were observed. Long term therapy with glucagon is both safe and effective in selected patients with severe cardiovascular disease states.

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REFERENCES

1. Farah, A., and Tuttle, R.: Studies on the Pharmacology of Glucagon. J. Pharmacol Exptl. Thearp. 129:49, 1960.
2. Regan, T. S., Lehan, P. H., Henneman, D. H., Behar, .A, Myocardial Metabolic and Contractile Response to Glucagon Epinephrine, J. Lab and Clin. Med, 63:638, 1964.
3. Puri, P. S., Bing, R. J.: Effects of Glucagon on Myocardial Contractibility and Hemodynamics in Acute Experimental Myocardial Infarction: Basis for Use in Cardiogenic Shock. Amer. Heart J., 78:660, 1969.
4. Parmily, W. W., Glick, G., and Sonnenblick, E. H.: Cardiovascular Effects of Glucagon in Man, N.E.J.M., 279:12, 1968.
5. Williams, J. F. ,Childress, R. H., Chip, J. N., Barber, J. F.: Hemodynamics of Glucagon in Patients with Heart Disease, Circulation, 39:38, 1969.
6. Wilchen, D. E. L., Lvoff, R.: Glucagon in Resistant Heart Failure and Cardiogenic Shock. Lancet, 1:1315, 1969.
7. Brogan, E., Kozoniz, M. D., Overy, D. C.: Glucagon in Heart Failure. Lancet, 1:482, 1969.
8. Sporn, J., Necheles, H.: Physiological Effects of Glucagon. Amer. J. Physiol. 187, 634, 1956.
9. Elrick, H., Huffman, E. R., Hlad, C. J., Whipple, N., and Slraub, A.: Effects of Glucagon on Renal Function in Man. J. Clin. Endocr. 18:813, 1958.
10. Hagen, J. H.: Effects of Glucagon on the Metabolism of Adipose Tissue, J. Bio Chem. 236:1023, 1962.
11. Lawrence, A. M., Glucagon, Provocative Test for Phrochromocytoma, Ann. Int. Med. 66:1091, 1967.
12. Samols, E., Marri, G., Marks, V.: Promotion of Insulin Secretion by Glucagon, Lancet 2:415, 1965.
13. Sokal, J. E.: Effects of Glucagon on Glucogeoniogenesis by the Isolated perfused Rat Liver. Am. J. Med. 41:331, 1966.
14. Sutherland, E. W., Cori, C. F.: Effect of Glucagon on Hepatic Glycogenolysis. J. Bio. Chemistry, 172:737, 1948.
15. Sutherland, E. W., Robinson, G. A., Butcher, R. W.: Some Aspects of the Biological Role of Adenosine Monophosphate and Cyclic A.M.P. Circulation 35:279, 1968.
16. Lucchesi, B. R.: Cardiac Actions of Glucagon, Arc. Rese 22:777, 1968.
17. Klein, S. W., Morch, J. E., and Mahon, W. H.: Cardiovascular Effects of Glucagon in Man, Can. Med. Assoc., J., 98:1161, 1968.
18. Williams, J. F. Jr., Childress, R. H., Chip, J. N., Border, J. F.: Hemodynamic Effects of Glucagon in Patients With Heart Disease, Circ. 39:38, 1969.
19. Kreisberg, R. A., Williamson, J. R.: Metabolic Effects of Glucagon Perfused Rat Heart, Am. J. Phisolo. 207:721, 1964.
20. Glick, G., Parmley, W. W., Wechsler, A. S. and Sonnenblick, E. H.: Glucagon, Its Enhancement of Cardiac Performance in Cat and Dog and Persistence of Its Inotropic Effect Despite Beta Receptor Blockade With Propanolol. Circ: Resc: 22:789, 1968.

PHENFORMIN AND LACTIC ACIDOSIS

JOEL FUTRAL, M.D. NICHOLAS ANTON, M.D.

INTRODUCTION

Phenformin has been shown to induce hypoglycemia and to promote lactic acid production.[1] There have been several reports of clinical lactic acidosis occurring in phenformin-treated patients; however, most of these cases had recognized additional causes of lactate production. The following is a case report of severe lactic acidosis occurring in a phenformin-treated diabetic in whom no underlying contributory factors (e.g., shock, hypoxia, and renal failure) were present. We feel that this case is one in which the causal relationship of phenformin-induced lactic acidosis is clear.

CASE REPORT

G. S., a moderately obese 71 year old woman with adult-onset diabetes of two years duration, was admitted to St. Joseph's Hospital on 10-18-70 in a stuperous condition. She presented with a four day history of fatigue and anorexia. Difficulty breathing with nausea and vomiting occurred only on the day prior to admission. She had been receiving DBI-TD 100 mg per day for almost a year but had been taking 250 mg per day for at least two weeks prior to admission. She denied fever, cough, chills, or diarrhea. There was no history of alcohol or other drug consumption besides DBI-TD. The blood pressure was 200/100, the pulse was 120 and regular, respiration 24, and oral temperature 98.4° F. There was no evidence of shock or congestive failure, and an acetone odor was absent. Neurologic exam was normal. The only consistent finding was diffuse abdominal tenderness without guarding or rebound.

Initial laboratory studies revealed the following: WBC-16, 700 Hb 16.9, Hct 51.8%. Serum electrolytes were Na+ 139, K+ 5.5, Cl-100, CO_2 4, Glucose 219 mg%, serum acetone neg, BUN 24 mg%, Salicylates 5.3 mg%, Serum lactic acid 211 mg% (normal 5-20 mg%). Arterial blood gases revealed pH of 6.78, PO_2 125 mm Hg on room air; other parameters could not be calculated. Amylase was 154 Somogyi units/100 ml and urinalysis revealed moderate acetone, negative glucose with a pH of 5 and a Sp. Gr. of 1.015. Chest x-ray was interpreted as showing "borderline pulmonary congestive changes" and a flatplate of the abdomen was normal except for the presence of barium in colonic diverticula, a residual of a previous colonic exam.

Therapy over the next twelve hours included 712 mEq of $NaHCO_3$ (16 ampules), approximately 2500 cc 5 percent Dextrose in Water and 15 u regular insulin given on a sliding scale based on urine values. During this period, urine output was 1590 cc, CVP ranged between 6-15 cm H_2O stabilizing at 4 cm H_2O and BP never fell below 100/60. At the end of the twelve hour period, laboratory studies were as follows: arterial blood

bases pH 7.47, pCO_2 32.9, pO_2 63.0; electrolytes Na146, K 3.2, Cl-89, CO_2 23. Further laboratory examinations were conducted to assess the possibility of underlying cardiovascular, renal, or hepatic dysfunction. The studies revealed a circulation time (arm to tongue) or 13 seconds, SGOT 62 units/ml, SGPT 24 units/ml, Bilirubin 1.0 mg%, alkaline phosphatase 44, BSP 10% retention at 45 minutes, serum protein electrophoresis was normal, and a creatinine clearance was 79 cc/minute, and an EKG was normal. The remainder of the hospital course was uncomplicated and the patient was discharged on the seventh hospital day only on Lenti insulin.

Figure 1.

Time (hours after admission)	Therapy (Ampules $NaHCO_3$ 44.5 mEq/Amp)	HCO_3	pH	pO_2	pCO_2
0	5	4	6.78	125	—
1½	4	5	7.05	—	17
2½	3	4	7.115	—	16.7
5½	4	6	7.31	—	13.2
7½		17.8	7.44	80.0	20.0
13		23	7.49	70.0	23.5

The above table shows: (1) the amount of $NaHCO_3$ required during the initial hours of therapy and (2) the response to the therapy as reflected by changes in the HCO_3, pH, pO_2, and pCO_2. It is interesting to note that the patient received a total of 712 mEq of $NaHCO_3$ when the calculated base deficit (bicarbonate deficit in mEq/L x .5 total body weight in kilograms) was 700 mEq, or almost equal to that amount actually given.

DISCUSSION

The relationship between lactic acidosis and high doses of phenformin in this case, are directly related. It has been shown by in vitro studies that phenformin interferes with cellular aerobic metabolism, and this enhances formation of lactic acid.[2]. Studies differ on whether cytochrome oxidase, the succinic oxidase system, or the NAD-dependent oxidative phosphorylase is the main site of inhibition.[3, 4, 5] Clinically, measurements of blood lactate in the phenformin-treated diabetic show an increase in lactate production. This effect has been shown to be dose-related (175-250 mg/day). It has been postulated that decreased renal function, whether due to intrinsic renal disease or inadequate perfusion, permits accumulation of phenformin. With the exception of one reported suicidal overdose, all previously reported cases of lactic acidosis in phenformin-treated patients have had evidence of underlying impaired renal function[6, 7, 8, 9] It would follow that these cases were due to accumulation of phenformin because of inadequate renal clearance. The duration of phenformin treatment has not been a factor since there has been a range of 5 days-4 years.[10] Phenformin-induced lactic acidosis without underlying renal or cardiovascular diseases has not been reported although it is predictable on the basis of the in vitro and clinical studies noted above.

SUMMARY

A case report of lactic acidosis secondary to Phenformin is presented. In this instance there was no evidence of underlying cardio-vascular-renal disease. The patients blood pH was 6.78. A total of 712 milli equivalients of sodium bicarborate were required to correct the acidosis. The patient survived.

REFERENCES

1. Steiner, D. F., Williams, R. H.: Respiratory inhibition and hypoglycemia by biguanides and decamethylonediguanide. Biochim et Biophys Aeta 30:329, 1958.
2. Ibid., p. 329.
3. Wich, A. M., Larson, E. A., Serif, G. S.: A site of action of phenethylbiguanide, a hypoglycemia compound. J. Biol. Chem. 233:296, 1958.
4. Kruger, F. A., Skillman, T. G., Hamwi, G. J., Grubbs, R. C., Danforth, N.: The mechanism of action of hypoglycemic guanidine derivatives. Diabetes 9:170, 1960.
5. Ungar, G., Psychoyes, S., Hall, M. A.: Action of phenethylbiguanide, a hypoglycemic agent, on tricarboxylic acid cycle. Metabolism 9:36, 1960.
6. Bernier, S. M., Miller, M., Springate, C. S.: Lactic acidosis and phenformin hydrochloride. JAMA 184:43, 1963.
7. Mengis, C. L.: Lactic acid acidemia and phenformin. Rocky Mountain Med. J. 61:39, 1964.
8. Proctor, D. W., Stowers, J. M.: Fatal lactic acidosis after an overdosage of phenformin. Brit. Med. J. 4:216, 1967.
9. Oliva, P. B.: Lactic Acidosis. American Journal of Medicine 48:209-225, 1970.
10. Olica, P. B.: Phenformin and lactic acidosis. Ann. Intern. Med. 38:548, 1969.

AN INTERESTING CASE OF ZOLLINGER ELLISON SYNDROME

SURIN CHAITOUGHCHAWONG, M.D.

Since Zollinger and Ellison, in 1955, first called attention to the syndrome of peptic ulceration and gastric acid hypersecretion in association with with non-beta islet cell pancreatic tumor, over 600 cases have been registered. They proposed that the tumor secretes a humoral substance that is capable of stimulating gastric acid secretion, and this substance has subsequently been shown to be gastrin.

The pathophysiology of this syndrome is well described in current reviews. However, its pathogenesis is still far from clear. Many concepts have been suggested. These include primary islet cell abnormality, familial genetic factors, hypothalamic-pituitary overactivity and gastric factors. A case of Zollinger-Ellison syndrome is presented in which the clinical and pathological findings support the concept of gastric factors as a pathogenesis of the syndrome.

CASE REPORT

The patient is a 31 year old Caucasian male who was well until March 1965, when he developed watery diarrhea with a progressive increase in severity. In early 1966, he experienced typical symptoms of duodenal ulcer disease. He was admitted to UCLA Hospital in September 1966 with the complaints of increasing diarrhea and peptic ulcer pain which were resistant to anticholinergics and antaeids. A 40 lb. weight loss was also noted. There was no family history of peptic ulcer disease. The physical examination was unremarkable. Laboratory findings, including serum electrolytes, serial calcium determinations, phosphorus, protein, electrophoresis, oral glucose tolerance test, lactose tolerance test, prothrombin time, 5HIAA, stool for ova, parasites and bacteria, 17 ketosteroids and 17 hydroxycorticosteroids in the urine, were within normal limits. Upper gastrointestinal series showed a small sliding hiatus hernia, gastric hypersecretion, a rapid small intestinal transit time, but no ulcer crater. Fecal fat was 14 gm./24 hrs. X-ray of the skull was negative. Jejunal biopsy and celiac axis and superior mesenteric arteriograms were also negative. A gastric secretory study showed a basal acid output (BAO) of 120 mEq./hr. and a post-histalog acid output of 133 mEq./hr. The pre-operative diagnosis was Zollinger-Ellison syndrome. Abdominal exploration was performed on June 20, 1967, and two pancreatic adenomas were found. Pathology showed one of the tumors to be a non-beta islet cell adenoma of the head of the pancreas and the other, a non-beta islet cell adenoma of the parapancreatic lymph node. The remaining lymph nodes showed only reactive hyperplasia.

During the operation, a Levine tube was placed in the stomach, and continuous suction showed a gastric secretion of 800 ml. within 70 minutes. After resection of the tumor, there was a precipitous drop in gastric secretion to a very minimal amount. Because of this drop in gastric secretion, it was felt that all the tumors had been removed and that no gastric surgery was needed.

The patient's post-operative gastric analysis revealed a basal acid output of 35.1 mEq./hr. and a post-histalog acid output of 124.9 mEq./hr. The patient did well post-operatively for approximately two years, or until July 1969, when he began to experience recurrent symptoms of diarrhea and epigastric pain. The symptoms were initially controlled with anticholinergic and antacid therapy. However, for the past six months, the patient has required five hospitalizations for the management of medically resistant peptic ulcer pain. On each hospitalization, he was treated with overnight naso-gastric suction with quick relief of his discomfort. Subsequent upper gastrointestinal series showed two ulcers within the duodenal bulb. The sequential gastric secretory studies and serum gastrin levels are as follows:

	Basal		Post-Histamine		
	Volume (ml.)	Acid Output (mEq.)	Volume (ml.)	Acid Output (mEq.)	Ratio (%)
Oct. 1969	169	12.6	558	74.5	16.7
Feb. 1970	231	21.4	642	90.9	24
April 1970	256	27.3			
Serum Gastrin		May 1970	167 pg./ml.		
		Sept. 1970	217 pg./ml.		

The interesting features of this case are as follows:

1. The initial presenting symptoms were diarrhea and a 40 lb. weight loss.
2. The symptoms of duodenal ulcer appearing one year after the onset of intractable diarhea.
3. The precipitous drop in gastric secretion after removal of the tumor.

4. A recurrence of his diarrhea and ulcer symptoms two years after surgery, with a gradual increase in the gastric acid output and a slow rise in serum gastrin level.

DISCUSSION

In 1964, Christlieb et al reported an autopsied case in which serial sections of the pancreas showed only hyperplasia of the non-beta islet cells of Langerhans without a primary pancreatic adenoma and with islet cell tumor in the peripancreatic lymph nodes. They concluded that Zollinger-Ellison syndrome may be a result of an undetermined stimulus of extrapancreatic origin acting on the islet tissue.

Friesen has found regression and disappearance of metastatic islet cell tumor in two patients with Zollinger-Ellison syndrome following total gastrectomy and suggested that there is a gastric factor affecting the islet cells of the pancreas and that these changes may represent an end stage of the duodenal ulcer diathesis. Recently, Passaro et al presented data on patients with Zollinger-Ellison syndrome in whom total gastrectomy produced a fall of serum gastrin to a low level, whereas even a very small rim of remaining gastric mucosa was associated with continued ulcer symptoms, elevated gastrin levels and tumor growth. These findings further support the hypothesis that a gastric factor plays a role in promoting hyperplasia of pancreatic islet cells.

The interesting feature in this case is a progressive increase of basal acid secretion within six months from a value of 12.6 mEq./hr. to 27.3 mEq./hr. with increasing BAO/MAO ratio and an increasing value of fasting serum gastrin levels associated with increasing severity of the symptoms. These suggest an increase in the parietal cell mass in this case under the influence of a gastric factor. The possibility exists that he has not had a recurrence of an islet cell adenoma and that with the passage of time, development of islet cell adenoma is a possibility of an end stage of the duodenal ulcer diathesis.

Wilson and Ellison reported 29 of 106 patients (27%) are still living in whom all gastric musoca remains, 79 of 164 (53%) with subtotal gastrectomy are alive, 45 of 63 (73%) survive who were treated with subtotal, then total gastrectomy, and 13 of 15 patients (87%) with total gastrectomy are alive. Total gastrectomy has resulted in the greatest survival in patients with ulcerogenic tumors of the pancreas. In addition, some of these patients have gained weight instead of losing weight after total gastrectomy. It is therefore suggested that total gastrectomy is the operative choice in this disease.

SUMMARY

A case of Zollinger-Ellison syndrome without clinical and laboratory evidence of associated endocrine disease underwent abdominal exploration in 1967, and an adenoma of the non-beta islet cells of the pancreas and an adenoma of the peripancreatic lymph node were found. A sudden drop in the gastric secretion after the removal of the tumor was noted, and that was the only operative procedure done at that time.

After a relative quiescence for two years, increasing levels of basal acid output, increasing ratio of BAO/MAO and a high normal serum gastrin level, accompanied by increasing symptoms of peptic ulcer requiring five hospitalizations for the past six months were noted. This observation, together with the previously reported findings, supports the concept that there is a gastric factor affecting islet cells of the pancreas and that Zollinger-Ellison syndrome represents an end stage of duodenal ulcer disease. Therefore, total gastrectomy is suggested as the operation of choice.

ACKNOWLEDGENT

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REFERENCES

1. Zollinger, R. M., Ellison, E. H.: Primary peptic ulcerations of jejunum associated with islet cell tumors of pancreas. Ann. Surg. 142:709, 1955.
2. Hallenbeck, H. L.: The Zollinger-Ellison Syndrome. Gastroenterology 54:426, 1968.
3. McGuigan, J. E., Trudeau, W. L.: Immunochemical measurement of elevated levels of gastrin in the serum of patients with pancreatic tumors of the Zollinger-Ellison variety. N.E.J.M. 278-1308, 1968.
4. Christlieb, A. R., Shende M., Schuster, M. M.: Zollinger-Ellison Syndrome. Report of a case supporting the hypothesis of extrapancreatic etiology. Ann. Intern. Med. 60:1059, 1964.
5. Friesen, S. R.: A gastric factor in the pathogenesis of the Zollinger-Ellison syndrome. Ann. Surg. 168:483, 1968.
6. Passaro, E., Basso N., Sanchez, R. E., Gordon, H. E.: Newer studies in the Zollinger-Ellison syndrome. Am. J. Surg. 120:138, 1970.
7. Wilson, S. D., Ellison, E. H.: Survival in patient with the Zollinger-Ellison syndrome treated by total gastrectomy. Am. J. Surg. 111:787, 1966.

PULMONARY FIBROSIS IN PIGEON BREEDERS' DISEASE

JAMES HEYWOOD, B.A.

In 1965, Reed and Associates[1] published the first report concerning Pigeon Breeder's Disease, an addition to the group of interstitial pulmonary diseases resulting from a hypersensitivity to inhaled organic substances.[2-4] Pigeon Breeder's Disease is associated with chills, fever, cough, dyspnea and malaise beginning shortly after exposure to pigeons. Other characteristics include an Arthus type of skin reactivity to pigeon antigens, precipitating antibodies against various pigeon antigens,[5-7] and pulmonary function tests indicating some degree of expiratory air flow obstruction, minimal increase in residual volume and impaired diffusing capicity.[7, 8]

This paper concerns a patient who appears to suffer from an infrequently reported chronic form of the disease producing fibrosis rather than the more common emphysema-like syndrome.

CASE REPORT

The patient is a 55 year old handyman who has had extensive pigeon contact since childhood. He entered the U. S. Army at age 25 where he worked in coops with pigeons for 8 hours a day. After approximately 11 months of this intensive contact he developed dyspnea, cough and malaise which persisted while enroute overseas and resulted in his return to the mainland. By the time he arrived back in the United States the symptoms, except for weakness, had resolved. A diagnosis of pulmonary tuberculosis resulted in discharge from the Army in 1943, 9 months after the onset of symptoms, despite negative skin tests and numerous gastric and sputum cultures (Figure 1). Dyspnea and malaise recurred each time the patient was in contact with pigeons. Gradually he developed a chronic productive cough and at age 44 years he moved to Arizona. By 1964, marked roentgenographic changes had occurred (Figure 2).

His high degree of sensitivity to pigeons is illustrated by the occurrence of dyspnea and malaise while doing repair work at a private home. The employer had no pigeons but a pigeon coop in an adjacent yard had been removed one week previously.

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The patient was 50 years old in January 1965 when continued complaints of cough and increasing sputum production prompted a thorough reexamination. Skin tests with coccidioidin 1:100 and 1:10, histoplasmin 1:100 and PPD 0.005 mg. were negative. Open lung biopsy revealed nonspecific nodular diffuse chronic inflammatory changes with extensive fibrosis and no specific granuloma, fungus, or neoplasm. Pulmonary function studies during June 1965 demonstrated a moderate ventilatory impairment which was unimproved by 60 mg. per day of prednisolone for approximately 2 months (Table 1).

The patient's cough, sputum production and dyspnea were treated symptomatically for the next three years. Chest roentgenograms changed little during this period (Figure 3). The patient required hospitalization in December 1969 for increasing purulent sputum, cyanosis and ankle edema. Therapy with antibiotics, digitalis, bronchodilators and positive pressure breathing



Figure 1.
PA Chest Roentgenogram in 1943. Note the increased bronchovascular markings at both lung bases.



Figure 2.
PA Chest Roentgenogram in 1964. There has been marked progression of the interstitial process.

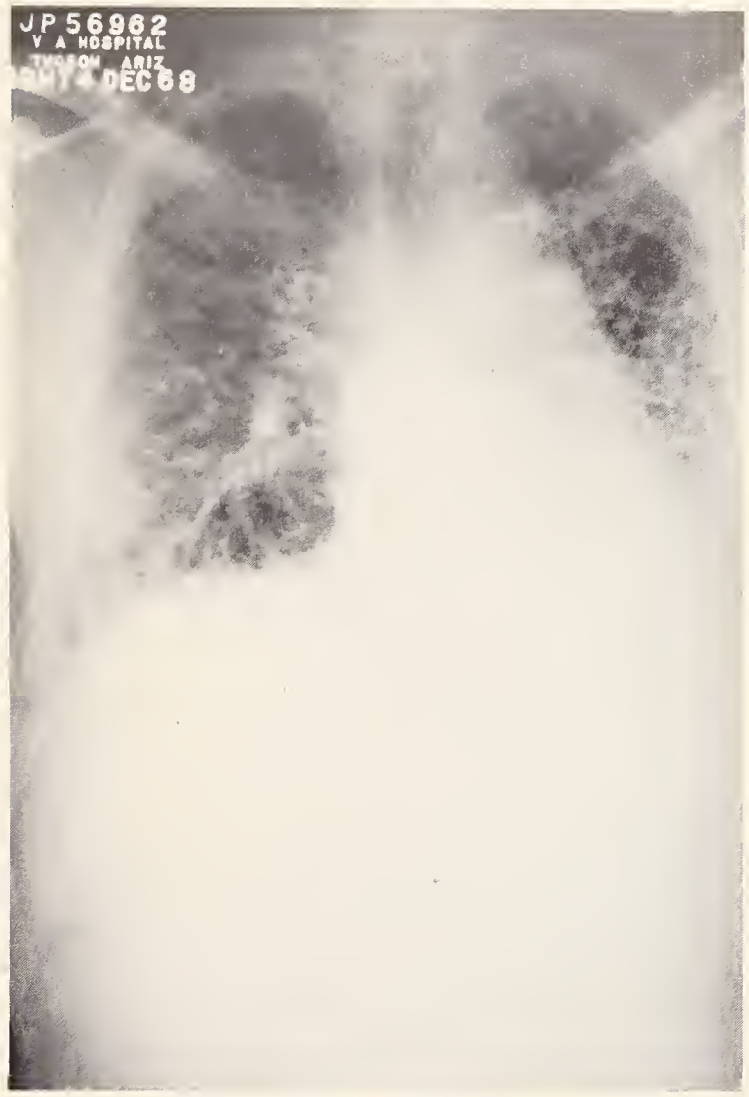


Figure 3.
PA Chest Roentgenogram in 1968. No definite change in appearance has occurred.

TABLE 1

	6/65	9/65	2/69	12/69	8/70	Predicted
FVC,L*	2.3	2.2	1.5		1.3	4.3
FEV_1,L	1.9	1.8	1.4		1.3	3.3
RV,L			3.2			2.2
TLC, L			4.5			6.5
MVV, L/min	9.7		102		96	118
D_LCO,(SB)ml/min / mmHg			14			23
REST – Breathing Room Air						
pH	7.39		7.38	7.35	7.35	7.4
PCO_2, mmHg	40		40	47	50	40
PO_2, mmHg	84		53	56	73+	80
SaO_2, %	95		84	80	93	95
HCO_3 mM/L	23		30	26	26	25
EXERCISE						
pH	7.39		7.36			7.4
PCO_2, mmHg	46		52			40
PO_2, mmHg	67		47			80
SaO_2, %	92		82			95
HCO_3, mM/L	27		27			25

*No significant change after bronchodilator

+Receiving 3.5 L/min O_2 supplement

FVC = forced vital capacity, FEV_1 = forced expiratory volume in 1 second

RV = residual volume, TLC = total lung capacity, MVV = maximal voluntary ventilation, D_LCO = diffusing capacity for carbon monoxide, single breath

(IPPB) resulted in some improvement and the patient was discharged with a program of home oxygen therapy.

Recurrence of cyanosis, ankle edema and thick purulent sputum containing coagulase negative staphylococci, prompted extended rehospitalization of the patient from May to November, 1970. Controlled low-flow oxygen, IPPB and antibiotics again resulted in improvement. Skin tests were repeated and again non-reactive. The patient's serum was found to have one precipitin line against a standard pigeon sera antigen. Skin testing with 0.1 cc of 1:10 dilution of pigeon sera produced essentially no reaction until five days after injection when a massive painful erythema and minimal induration developed (Figure 4). The reduced lung volumes indicated a restrictive ventilatory defect. In addition, there was hypoxemia after exercise and well preserved expiratory airflow and maximal voluntary ventilation (Table 1). These physiologic alterations are compatible with the pathologic findings of an interstitial process. Chest roentgenograms in 1970 re-



Figure 4.
Erythematous indurated skin reaction to 0.1 cc of 1:10 pigeon sera at 5 days.



Figure 5.
PA Chest Roentgenogram in 1970. The appearance is that of a diffuse interstitial process of the fibrotic type.

vealed a diffuse interstital process involving all portions of both lungs (Figure 5).

The most recent physical examination of the patient was performed in November 1970 and revealed a pale, underweight elderly man in respiratory distress despite continuous oxygen. The body weight was 100 lbs., pulse 112, respiration rapid, temperature 98F. Bilateral coarse rales were present especially at the lung bases and on the right side. There was no cardiac abnormality. The liver was 10 cm below the costal margin. Ankle edema and digital clubbing were present. The patient remains in the hospital. The current therapy continues to be symptomatic, including continuous oxygen. Antibiotics, tracheal bronchial hygiene and the vigorous use of bronchodilators are necessary to control infection, cough and sputum production.

DISCUSSION

This patient's early history and roentgenographic findings are typical of that described for Pigeon Breeder's disease. The anticipated Arthus type of skin hypersensitivity, although delayed four days in appearance, was definitely present (Figure 4) and precipitating antibodies were noted against pigeon antigens.

The course of this patient represents a somewhat unusual manifestation of Pigeon Breeder's disease. It is uncommon to have a chronic history of some 27 years. The symptomatology ordinarily causes patients to avoid pigeons but the circumstances of this man's life apparently made this impossible. More commonly, if there is ventilatory function impairment, it is of the obstructive airway type, but findings have been variable.[8, 11] The presence of microscopic pulmonary fibrosis and a restrictive ventilatory impairment in this individual suggests that the continued exposure caused intensive alteration of lung parenchyma.

A more definitive diagnosis of Pigeon Breeder's disease could be made by having the patient inhale pigeon material. This was not done because of the severity of this man's illness. A distinctive pathologic feature of the acute and sub-acute form of this disease is interstitial foam cell aggregations.[10] These were not present in

this biopsy. Interstitial fibrosis has been common in the acute and sub-acute phase of the very few chronic cases reported in the literature. This would be consistent with the pathologic findings in this patient.

SUMMARY

The 27 year course of a patient with pulmonary fibrosis is reviewed. Symptoms initially occurred following exposure to pigeons. The presence of an Arthus-type skin reaction and precipitins against pigeon sera antigen further support the diagnosis of Pigeon Breeder's Disease. Continued long term exposure to pigeons resulted in diffuse pulmonary fibrosis.

ACKNOWLEDGMENT

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REFERENCES

1. Reed, C. E., Sosman, A. J. and Barbee, R. A.: Pigeon-Breeder's Lung. J.A.M.A. 193:261, 1965.
2. Fuller, C. J.: Farmer's Lung: A Review of Present Knowledge. Thorax 8:59, 1953.
3. Hunter, D. and Perry, K. M. A.: Bronchiolitis Resulting from Handling Bagasse. Brit. J. Industr. Med. 3:64, 1946.
4. Emanuel, D. A., Wenzel, F. J. and Lawton, B. R.: Pneumonitis Due to Cryptostroma Corticale (Maple Bark Disease). New Eng. J. Med. 274:1413, 1966.
5. Fink, J. N., Barboriak, J. J. and Sosman, A. J.: Immunologic Studies of Pigeon Breeders' Disease. J. Allergy 39:214, 1967.
6. Fink, J. N., Barboriak, J. J., Sosman, A. J., Bukosky, R. J. and Arkins, J. A.: Antibodies Against Pigeon Serum Proteins in Pigeon Breeders' Disease. J. Lab. Clin. Med. 71:20, 1968.
7. Barboriak, J. J., Fink, J. N. and Scribner, G. H.: Antigenic Specificity in a Hypersensitivity Pneumonitis. Int. Arch. Allergy 33:473, 1968.
8. Schlueter, D. P., Fink, J. N. and Sosman, A. J.: Pulmonary Function in Pigeon Breeders' Disease. Ann. Int. Med. 70:457, 1969.
9. Unger, J. D., Fink, J. N., and Unger, G. F.: Pigeon Breeder's Disease: A Review of the Roentgenographic Pulmonary Findings. Radiology 90:683, 1968.
10. Hensley, G. T., Garancis, J. C., Cheragil, G. D. and Fink, J. N.: Lung Biopsies of Pigeon Breeders' Disease. Arch. of Path. 87:572, 1969.
11. Dinda, P., Chatterlee, S. S. and Riding, W. D.: Pulmonary Function Studies in Bird Breeder's Lung. Thorax 24:374, 1969.

MALARIA, A NEW THREAT FROM AN OLD FOE

JOHN P. BYRNE, M.D.

Malaria is no longer an exotic disease in Arizona. Thirteen young men with malaria have been seen at the Phoenix Veterans Administration Hospital in the past two years. All had recently returned from Southeast Asia.

They represent the vanguard of a much larger number of patients. It has been announced that all but most of our troops will be returned from Southeast Asia by next year. A study at Fort Hood, Texas, showed a 4% incidence of malaria in Vietnam returnees.[1] Based on these figures, there will be 20,000 potential malaria patients among the half million men coming home.

The practicing physician must be familiar with malaria not only because he will be the first to see these patients, but also because the mortality of malaria treated in civilian hospitals is strikingly higher than for the same condition treated in military hosiptals — 10% vs. less than 1%.[2]

Troops return from Southeast Asia by jet aircraft and are given an immediate discharge or 4-6 weeks leave. They are at home within 24 to 36 hours after leaving Vietnam and they will be home when they get sick.

Figure 1 shows our patients became ill within six weeks of leaving Vietnam if they did not take their prophylactic medication and within six weeks of the end of prophylactic therapy if they did.

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Eight of our patients were seen prior to admission and the diagnosis was made in only two. Conversely, three men sent in with a diagnosis of malaria did not have it.

Diagnosis is not difficult if it is considered, and it certainly should be in any febrile patient who has been in Southeast Asia.

Symptoms were limited to chills, fever, headache, anorexia, nausea, vomiting, and in one man, delerium.

The most striking physical finding was a temperature of at least 104°. This finding was present in 11 of the patients and sharply demarcated them from Vietnam returnees with non-malarial febrile illness. Splenomegaly was also present in 11, but the two without palpable spleens were not the two with temperatures below 104°. These are shown in Figure 2.

Figure 3 shows that malaria patients have a low or normal white count; two had significant hemolytic anemia; and several had urinary findings, all of which cleared with defervescence. Three had a positive VDRL. One had syphilis; the one with falciparum malaria had a false positive; and one, unfortunately, was not investigated.

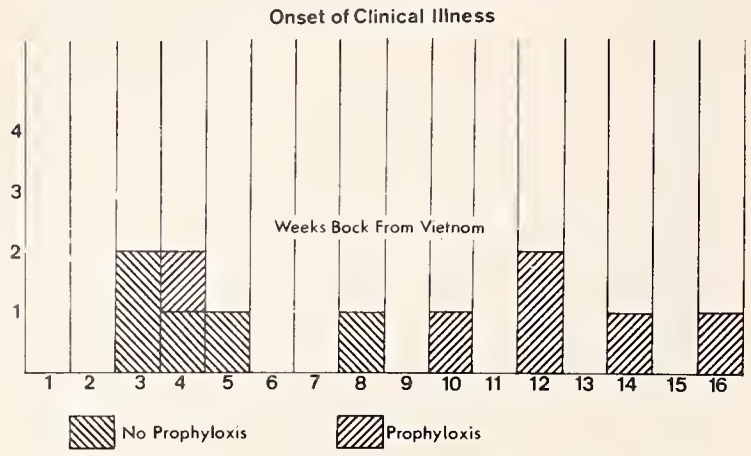


Figure 1

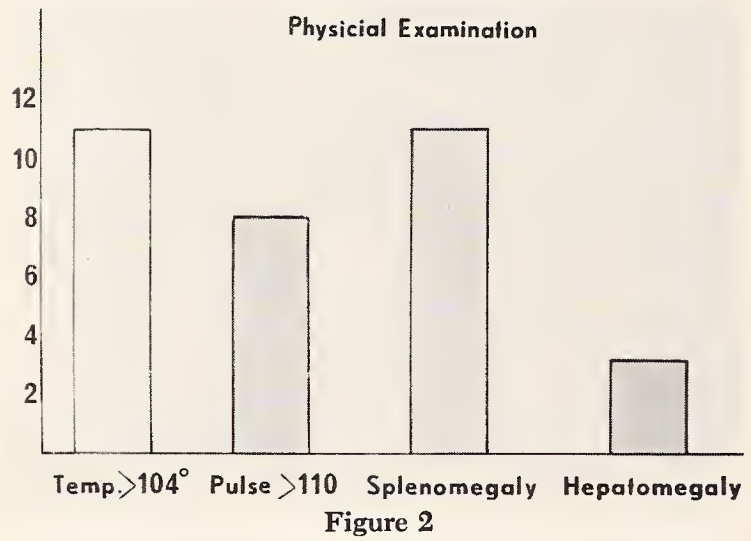


Figure 2

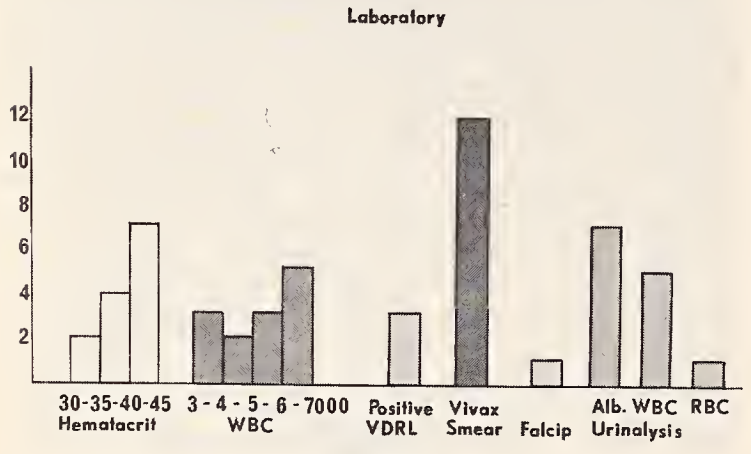


Figure 3

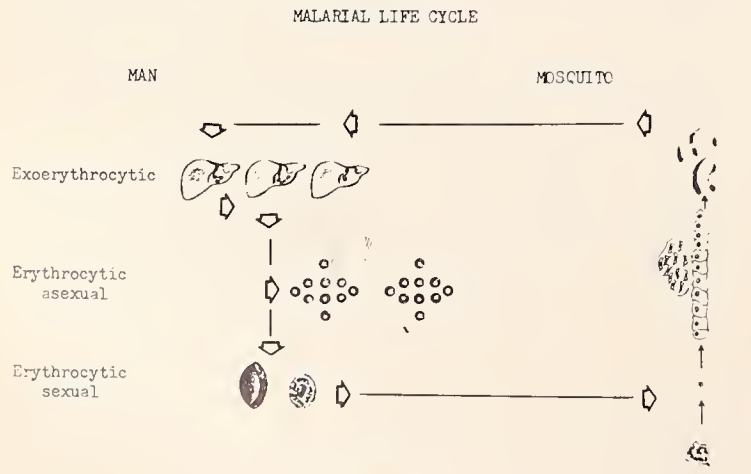


Figure 4

These features are interesting, informative, and hopefully, even stimulating; but malaria is that disease which results from the invasion of erythrocytes by the malarial organism; and its diagnosis rests on a single test — the demonstration of the intracellular parasite in stained smears of the blood. In our experience smears were always positive during paroxysms of chills and fever. Because the morbidity of malaria increases with the degree of parasitemia and because the increased mortality in civilian hospitals is at least partly due to delays in diagnosis and therapy, we call technicians at any time to make smears. In our recent patients we have been able to make the diagnosis and start therapy within an hour of admission to the ward.

The smear must give a species specific diagnosis because one cannot treat "malaria" anymore than he can treat "anemia." A brief look at the life cycle of the malarial organism in Figure 4 will show why. Maturation and fertilization of the sexual forms occurs in the mosquito with migration to the salivary glands by the sporozoites which are injected when the mosquito takes a blood meal. These migrate to the liver where the primary exoerythrocytic schizont develops. This ruptures releasing merozoites into the blood. Schizonts and other merozoites — asexual forms — develop in the red cells providing for continued invasion of other red cells. A few of the merozoites undergo another form of development — the sexual — into male and female gametocytes. These are ingested in the blood meal of the mosquito to complete the cycle.[3]

In vivax malaria when the primary hepatic schizont ruptures, some merozoites reinvade the liver leaving the patient liable to relapse. Secondary reinvasion does not occur in falciparum malaria.

The drugs we use in therapy are chloroquine, primaquine, quinine, pyrimethamine, and Dapsone — diaminodiphenylsulfone. They are active against different species and at different stages of the life cycle.

Chloroquine is active against the erythrocytic sexual and asexual forms but not against the exoerythrocytic forms in the liver. This is why chloroquine cannot be used as the sole therapeutic agent in vivax malaria but is curative in

ordinary falciparum malaria, where there are no secondary hepatic schizonts. However, all falciparum malaria from Southeast Asia and some from South America is resistant to chloroquine.[4]

Primaquine is active against exoerythrocytic forms and thus complements the action of chloroquine in vivax malaria. This drug can cause hemolytic anemia in patients with erythrocytic glucose 6-phosphate dehydrogenase deficiency. This includes 10-15% of American Negro men and more than 20% of certain peoples from the Mediterranean basin.[5]

Quinine in large doses may cause headache, nausea, vomiting, diminished auditory and visual acuity, and giddiness. Most of these subside with cessation of therapy but some permanent auditory and visual damage has resulted. Quinine alone is only partially active against the erythrocytic asexual forms of resistant falciparum malaria. For this reason it is combined with pyrimethamine which helps clear the blood of asexual forms and renders the sexual forms sterile.

Dapsone has a slow action as a blood schizontocide against falciparum and also prevents mosquito induced infection by this strain. It is used because the quinine-pyrimethamine combination is effective in only 93% of patients with resistant falciparum malaria.[5]

Prophylaxis employed by American forces in Southeast Asia consists of a single tablet of 300 mg. of chloroquine base and 45 mg. of primaquine base once a week for all personnel. Those in areas of falciparum infestation also get 25 mg. of Dapsone daily. Upon leaving the endemic area everyone gets an eight week supply of chloroquine-primaquine tablets plus a 30 day supply of Dapsone for those from falciparum areas.[6]

The goal of therapy is radical cure, not only for the sake of the patient, but for public health reasons. Appropriate malarial mosquito vectors are present in all of the states except Alaska.[4] There is documented evidence of introduced malaria at Fort Benning, Georgia, in 1964 and 1965.[7] These patients should be treated in facilities with well screened windows.

For vivax malaria we use chloroquine 1 gram immediately, 500 mg. in 6 hours, and on days 2 and 3; and primaquine 15 mgs. daily for 14 days. A single paroxysm may be seen following the institution of therapy.

If fever or parasitemia persist, serious consideration should be given to combined vivax and falciparum infection.

Falciparum malaria is treated with quinine 650 mg. every 8 hours for 10 days, pyrimethamine 25 mg. daily for 3 days, and Dapsone 25 mg. daily for 28 days. Vomiting may require parenteral quinine dihydrochloride.

In mixed infections the regular chloroquine-primaquine prophylactic tablets are given once a week for 8 weeks in addition to the usual falciparum therapy.

Complications we encountered included hemolytic anemia in 6 patients, relapse in two, and a retinal hemorrhage in one. All had vivax malaria.

The explanation of the hematologic complications is not completely satisfactory. The percentage of parasitized red cells is much less than the fall in hematocrit, but there is also evidence of sequestration of parasitized and non-parasitized erythrocytes in the reticulo-endothelial system.[2] Thromboses and hemorrhages are accompanied by a fall in platelets. Again there is evidence of reticulo-endothelial hyperplasia as well as controversial evidence of consumption coagulopathy.[2,8] Relapse is due to persistent exoerythrocytic forms in the liver. Our patients with relapse were the two who had chills and fever after the institution of therapy.

The most dreaded complications of malaria are seen in the falciparum type and consist of renal failure, cerebral malaria, and acute pulmonary edema.[9]

Renal failure may or may not be accompanied by "black water." The presence of "black water" simply means that hemolysis is occurring, the plasma haptoglobin concentration has been exceeded, and hemoglobin or its degradation products is being excreted in the urine.

The treatment of these complications is the usual treatment for the condition plus vigorous antimalarial therapy with parenteral quinine.

Because he will be seeing more malaria, a disease with extreme morbidity and significant mortality, which is a public health threat that can be transmitted by blood transfusion[10] as well as by the mosquito, the thoughtful physician will prepare himself to diagnose and treat it successfully.

BIBLIOGRAPHY
1. Waterhouse, B. E., Riggenbach, R. D.: Malaria. JAMA 202:683-685, 1967.
2. Neva, F. A., Sheagren, J. N., Shulman, N. R., Canfield, C. J.: Malaria: Host Defense Mechanisms and Complications. Ann Intern Med 73:295-306, 1970.
3. Alstatt, L. B.: A Clinical View of the Biology of Plasmodia. Ann Intern Med 70:130-134, 1969.
4. Blount, R. E.: Malaria — A Persistent Treat. Ann Intern Med 70:127-129, 1969.
5. Berberian, D. A.: Recent Advances in Malariology. Amer J Med 46:96-117, 1969.
6. Bunge, W. R.: Malaria — Chemoprophylaxis Viet Nam and Post-Viet Nam. JAMA 212:159, 1970.
7. Luby, J. P., Schultz, M. G., Taras, N., Kaiser, R. L.: Introduced Malaria at Fort Benning, Georgia, 1964-1965. Amer J Trop Med & Hyg 16:146-52, 1967.
8. Conrad, M. E.: Pathophysiology of Malaria. Ann Intern Med 70: 134-141, 1969.
9. Blount, R. E.: Acute Falciparum Malaria. Ann Intern Med 70:142-147, 1969.
10. Dike, A. E.: Two Cases of Transfusion Malaria. Lancet 11:72-73, 1970.

RENAL TRANSPLANTATION: CRITERIA FOR SELECTION OF DONORS

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In the past nine years, some 2,800 renal transplants have been performed. By conservative estimates, there are some 6,000 individuals each year in the United States who could benefit from a renal transplant. From where will the number of kidneys required to meet this demand come? A discussion of the following four topics will give some answers to this question: a) sources of donor organs, b) criteria for selection of honors, c) preservation of organs, and d) availability of donor organs.

A. Types of donors: Two broad sources of donors are possible — human grafts including allografts and isografts, and animal grafts or xenografts. Isografts are transplants between identical twins. Allografts are transplants from living individuals[5, 10] or cadaver[2, 3, 4, 6] donors which are obtained immediately after the patient has died. Transplants from living individuals are now limited only to those between related donors and recipients since transplants from unrelated living donors offer no advantage over those from cadaver donors. Xenografts, or interspecies grafts, are not immunologically feasible today in man.

B. Criteria for selection of donors: (1) Living donors: From a genetic standpoint, living related donors should give the best organ survival in the allograft situation. Siblings are better than parents in this regard. Informed consent for surgical removal of the normal kidney for donation purposes must be obtained. For minors, a court ruling on donation must be obtained in many states. In order to select the best possible donor from a family group, the following tests must be performed. The donor must be ABO compatible with the recipient. Tissue typing of the Terasaki[9] type must be performed to determine the best genetic match possible from those donors who have a satisfactory, entirely normal general and genitourinary work-up: Complete urinalysis, urine culture, blood urea nitrogen, creatinine clearance, intravenous pyelogram and aortogram (to determine the number of renal arteries). (2) Cadaver donors: The age of cadaver donors can run from 6 to 60. The cause and circumstances of death must be determined very carefully. The cause of death — whether cardiac standstill or a central nervous system death — must be determined by the patient's primary physician and not by any member of the transplantation team. Once the patient has been pronounced dead, legal permission must be obtained from the next of kin or through the use of the Uniform Anatomical Gifts Act card, which makes it possible for the individual to donate his body or parts thereof for transplantation purposes. Examples of types of patients who make excellent donors are patients who require respiratory assistance due to central nervous system injury and have no evidence of peripheral nervous response; patients who have severe pulmonary insufficiency as terminal emphysematous patients who cannot breathe sufficiently without respirator assistance; and patients with acute cardiac arrest due to primary cardiac disease.

The cadaver donor should have good renal function; one to four hour creatinine clearance; urinalysis negative for protein or other pathological miscroscopic materials; no primary renal disease such as acute or chronic pyelonephritis; no prior history of hypertension; no septicemia; and no malignancy[1, 7] except primary central nervous system carcinomas. The respiratory and circulatory physiology of the donor immediately prior to death is important: Adequate ventilation and effective circulation resulting in substantial urinary output must be maintained with appropriate mechanical devices and therapeutic agents. In older donors, a frozen section of the organ to be transplanted should be obtained and gross autopsy[3] examination of all the donor's

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organs should be performed to rule out undiagnosed malignancies or unsuspected infectious disease processes. A few hours lead time prior to death is required for tissue typing to be performed. As will be pointed out below, this time also allows the donor procurement team to make arrangements for shipment of one or both kidneys to another transplant center if only one or no potential recipient of suitable tissue type is available locally.

C. Preservation of organs: If the donor has been pronounced dead on the basis of central nervous system damage, the kidneys can be removed prior to cardiac arrest by a sterile operation with great care not to injure the kidney. Then the transplant may be performed immediately with a resulting ischemia time of 20 to 30 minutes, similar to a living related donor operation. If the donor is at cardiac standstill when pronounced dead, the most critical part of the organ preservation is the length of warm ischemia time which leads to tubular nercrosis. The best method of stopping this warm ischemia damage to the organ is to cool it as rapidly as possible by perfusion with a salt solution at 4 to 8 degrees centigrade after removing it by sterile operation within one hour of cardiac arrest. Once the organ has been cooled, a period of up to 10 hours is available to prepare the recipient for transplantation or to ship the preserved organ to an appropriate transplant recipient in any city. These "cooled kidneys" may or may not have immediate life-sustaining renal function post-transplant and may even require three to five weeks to recover from acute tubular necrosis. A lack of renal function immediately post-transplantation poses serious problems to the recipient and his physician: post-transplant dialysis; disadvantages in immunosuppressive therapy; and recognition of rejection crises.

Belzer and associates,[8] utilizing the Belzer perfusion apparatus, have outlined procedures which allow for a better evaluation of the cadaver organ than has been possible previously. This perfusion apparatus has allowed an assessment of the vasoconstriction which has taken place in the kidney prior to its removal from the cadaver. Such vasoconstriction persists in the immediate postoperative period when the kidney is warm and results in acute tubular necrosis. The perfusion machine can preserve a human kidney up to 35 hours and allows immediate post-transplant renal function in most instances. Thus, the organ can be preserved, tissue typing performed when desired, and an almost elective cadaveric renal transplant performed. In a series of 70 patients, Belzer and his group in San Francisco have only had eight percent of the cadaver transplant patients require dialysis in the postoperative period.

D. Availability of donor organs: Good donors of organs die every day. The medical profession as a whole needs to think constantly of the need and the great possibilities that organ transplantation can offer the recipient. Once death has become inevitable in the opinion of the primary physician, the transplantation team can be notified and can carry out all the details without inconveniencing the attending physician. Legal permission must be obtained. BUT, UNLESS THE ATTENDING PHYSICIAN THINKS ABOUT THE NEED FOR ORGAN TRANSPLANTATION, NO ORGANS CAN BE TRANSPLANTED.

REFERENCES

1. McIntosh, D. A., McPhaul, J. J., Peterson, E. W., Harvin, J. S., Smith, J. R., Cook, F. E., Jr. and Humphreys, J. W., Jr.: Homotransplantation of a cadaver neoplasm and a renal homograft. JAMA 192:1171, 1965.
2. Nakamoto, S., Straffon, R. A. and Kolff, W. J.: Homotransplantation with cadaver kidneys. JAMA 192:302, 1965.
3. Ende, N. and Zukoski, C. F.: Emergency autopsy for the selection of donor kidneys. The use of 'senile" kidneys. JAMA 191:902, 1965.
4. McLean, L. D., Dossetor, J. B., Gault, M. H., Oliver, J. A., Inglis, F. G. and MacKinnon, K. J.: Renal homotransplantation using cadaver donors. Arch. Surg. 91:288, 1965.
5. Penn, I., Halgrimson, C. G., Ogden, D. A. and Starzl, T. E.: Use of living donors in kidney transplantation in man. Arch. Surg. 101:226, 1970.
6. Edne, N., Killen, D. A. and Zukoski, C. F.: Renal ischemic injury in various categories of cadaver donors. Transplantation 6:744-5, 1968.
7. Zukoski, C. F.: Transplanted carcinoma in an immunosuppressed patient. Transplantation 9:71-4, 1970.
8. Belzer, F. O., Reed, T. W., Pryor, J. P., Kountz, S. L. and Dunphy, J. E.: Cause of renal injury in kidneys obtained from cadaver donors. Surg. Gynec. Obstet. 130:467-77, 1970.
9. Terasaki, P. 1., Mandell, M., Van de Water, J. and Edgington, T. S.: Human blood lymphocyte cytotoxicity reactions with allogenic antisera. Annals of the New York Academy of Sciences 120:322-334, 1964.
10. Olander, R., Gelin, L. E., and Hood, B.: The living donor in renal transplantation. Scand. J. Urol. Nephrol. 2:25-30, 1968.

DIAGNOSIS AND MANAGEMENT OF UREMIC CONSTRICTIVE PERICARDITIS

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ALLAN I. COHEN, F.A.C.P.

INTRODUCTION

Ten years ago the appearance of a pericardial friction rub in a uremic patient was a sinister sign indicating imminent death. Today it is still a serious sign and does indicate urgent need for dialysis if the patient is to survive.

Uremic pericarditis occurs in about 30-40% of patients with terminal renal failure.[1, 2, 3] All evidence of pericarditis usually promptly disappears with adequate dialysis and late sequelae are rare.[1, 4]

However, as the life of the azotemic patient has been greatly prolonged by dialysis and transplantation, new clinical problems have been raised by the emergence of hemodynamically significant pericardial disease in a minority of these patients.

This complication may have a very insidious onset leading to unnecessary delay in diagnosis and definitive therapy.

We will present two cases in which an aggressive approach involving radical pericardiectomy produced marked clinical improvement.

That major surgical procedures can be carried out in patients with little or no renal function is now clear under conditions of hemodialysis support and careful medical management. Table 1 details our own experience.

TABLE 1
MAJOR SURGERY ON PATIENTS IN ARIZONA'S REGULAR DIALYSIS PROGRAM

Abdominal Hysterectomy	1
Bilaterial Nephrectomy	5
Pericardiectomy	3
Incarcerated Hernia Repair	1
Reduction of Intussusception and Bowel Resection	1
Unilateral Nephrectomy	4
Parathyroidectomy	4
Deaths Due to Surgery	0

CASE NO. 1

D. W., a 45 year old, white, retired naval officer on regular home dialysis for four years was placed on warfarin eight weeks prior to admission because of external A-V fistula clotting. Three weeks prior to admission he noticed dyspnea on exertion, vague anterior chest pain and orthopnea. Atrial fibrillation appeared four weeks prior to admission leading to digitalization. Although the patient was edematous, increasing hypotension was noted with dialysis and attempted ultrafiltration.

On admission a pericardial friction rub was heard. Chest x-ray showed a globular heart and a left pleural effusion. An echocardiogram was interpreted as normal.

The patient improved clinically and was discharged only to be re-admitted ten days later (1-20-70) with marked weakness, dyspnea, and neck vein distention with inspiratory augmentation of neck vein distention. Echocardiogram now suggested effusion, as did a radioactive scan.

On 1-23-70 a pericardial tap produced 120 cc of bloody fluid. A plastic catheter was left in place and clotted after 20 cc of drainage.

We do believe this patient was adequately dialyzed during this period. Pre-dialysis creatinines are shown in Table 2.

TABLE 2
Pre-Dialysis Creatinine (D.W.)

11/13	—	9.2
12/2	—	12.2
1/6	—	11.2
1/23	—	11.6

Cardiac catheterization showed a right atrial pressure of 14 mm Hg., right ventricular end diastolic pressure of 13 mm Hg. Angiocardiogram showed a small left ventricular cavity with wide separation of the cardiac silhouette and the endocardium of the left ventricle.

Pericardiectomy on 1-28-70 showed 1,000 cc of bloody effusion, marked fibrous thickening of the pericardium and extensive organization of blood clots. A pre-operative blood pressure of 60/30 to 100/60 was found. This increased to 130/70 shortly post-operatively and 150/90 at the time of discharge.

Patient has demonstrated increase in strength and no problem with hypotension with dialysis since pericardiectomy.

Figures 1 and 2 show pre-op angiocardiogram and pre and post-op chest films.

CASE NO. 2

R. H., a 50 year old, white, male insurance salesman on regular home dialysis for one year required bilateral nephrectomy for intractable hypertension two months prior to admission.

He developed hypotension with ultrafiltration during dialysis despite obvious edema and physical examination disclosed no pericardial friction rub but venous distention. An x-ray showed



Figure 1



Figure 2 — Pre-op.

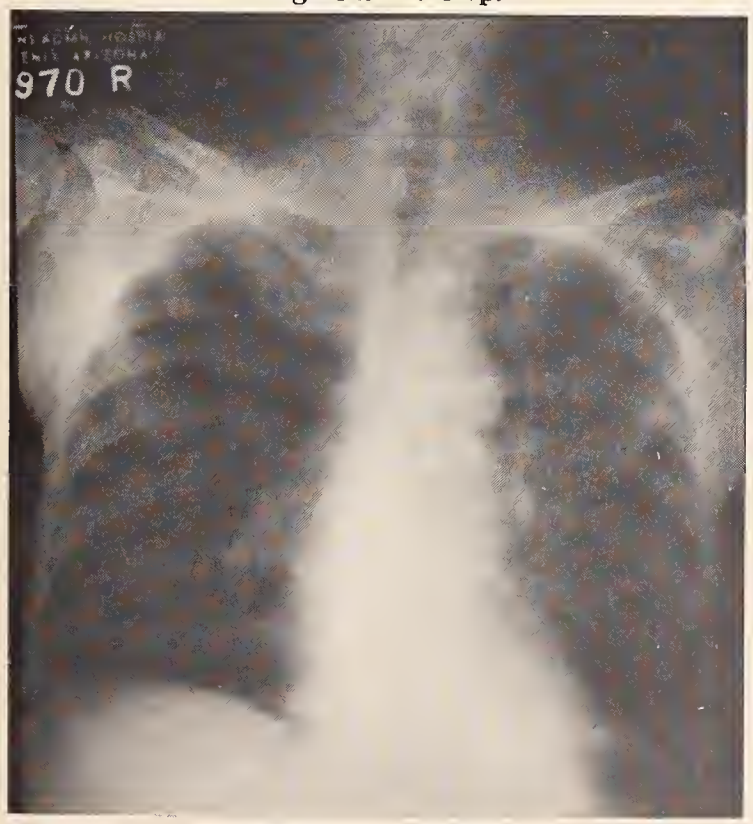


Figure 2 — Post-op.

cardiomegaly and venous and vascular congestion. His blood pressure was 84/50.

The patient was digitalized and given ephredine without effect and solu cortef was added with apparent beneficial effect on his blood pressure with a rise to 130/80. However, his serum cortisol was normal prior to steroid administration.

Five months later he was admitted for repair of incarcerated right inguinal hernia and he had a pericardial friction rub. He was discharged, but one month later was readmitted with persistent hypotension, neck vein distention, 8-10 mm of pulses paradoxicus and a positive echocardiogram.

Cardiac catheterization showed a right atrial pressure of 14 mm Hg and a diastolic right ventricular pressure of 14 mm Hg. Cineangiogram showed a wide separation between the endocardium of the right atrium and the cardiac silhouette.

At pericardiectomy there was 500 cc of bloody fluid, marked thickening of the parietal pericardium to 0.6 cm and a dense peel over the ventricle. The pericardium was removed radically and a dense visceral peel dissected off the heart.

Post operatively his blood pressure increased from 110/70 to 150/90 at discharge.

Clinical hemodynamic problems disappeared for several months following surgery but congestive heart failure unrelated to pericorditis then appeared.

Again, we believe this patient was properly dialyzed during this period. Pre-dialysis creatinines are shown in Table 3.

TABLE 3.
Pre-Dialysis Creatinine (R.H.)

5/7	—	9.2
5/8	—	8.7
5/15	—	10.2
6/20	—	12.7

Figure 3 shows the pre-op angiocardiogram.

DISCUSSION

Uremic pericarditis presenting prior to dialysis even with tamponade is usually reversed by adequate dialysis.[4, 11] However, when the same complication appears in a seemingly adequately dialyzed patient and may have hemodynamic importance, the problem is not so easily resolved. Many questions arise:

1. What is the hemodynamic importance of the effusion, if present?
2. What diagnostic steps should be taken to elucidate the problem?

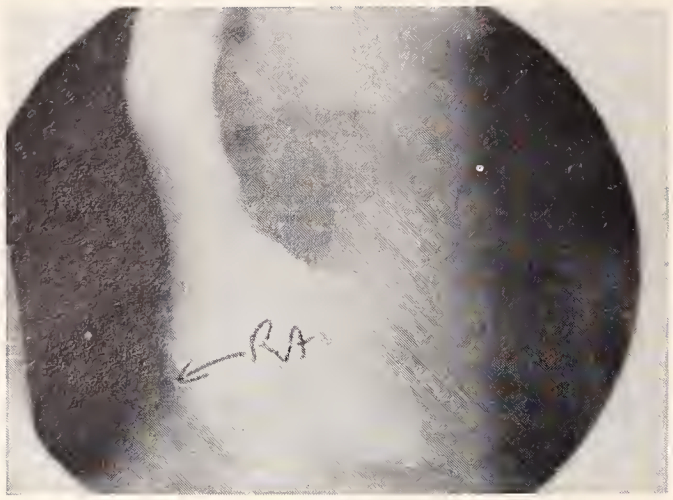


Figure 3

3. Under what circumstances should pericardiocentesis be done?
4. Should a patient with a friction rub be allowed to perform home dialysis?

Based on our own experiences and those of others, we have come to these conclusions:

1. The appearance of hypotension during dialysis in a previously hypertensive or normotensive edematous individual should led to study for a restrictive hemodynamic process.
2. Cardiac catheterization provides definitive information as to (a) presence of effusion, and (b) hemodynamic significance. Other diagnostic procedures such as echocardiogram and radioactive scans are helpful but at this state of the art not definitive.

 As an example, patient D. Q., a 46 year old, white, male on regular home dialysis for 18 months, presented similar physical findings to the two preceding patients. He was hypotensive with dialysis and had neck vein distention. Chest x-rays showed pericardial effusion and echogram was positive. Cardiac catheterization failed to show hemodynamic or angiographic evidence of a restrictive myocardial process.
3. The place of pericardiocentesis is more controversial. We feel that it has a very limited role for the following reasons:
 a. In the series of Collins, Ginn,[12] et al, four of nine patients who had pericardial taps required emergency pericardiectomy minutes to hours after performance of the procedure.
 b. If the process is primarily a fibrous constricting one it may be impossible to demonstrate efusion by pericardial tap and a fatal miscalculation may be made, as in the case of Cutforth,[5] et al.
 c. Repeated pericardial taps are unlikely to cause remission of a bloody exudative process and will probably only delay a definitive procedure.
 d. Finally, the procedure itself may have an appreciable death rate in these patients.[11]

The plight of the patient on a home dialysis program who develops a pericardial friction rub is not easily solved. Regional heparinization is not easily accomplished in the home and prolonged hospital dialysis is very expensive. Certainly it is very desirable to carry out careful regional heparinization if this is to be attempted.

Finally, the central diagnostic point, we believe, is not necessarily the presence of an effusion but the presence of a restrictive process. This alone can be adequately defined by cardiac catheterization. The difinitive therapeutic procedure is pericardiectomy and the risk of procrastination is greater than that of surgery.

SUMMARY

Two cases of uremic pericarditis, occurring in patients on regular dialysis and producing hemodynamically significant restrictive disease, are presented.

Radical pericardiectomy produced marked clinical improvement in each case.

The definitive diagnostic results of right heart catheterization and angiography are reported.

We believe pericardiocentesis should be done only for immediate relief of life-threatening tamponade in these cases.

REFERENCES

1. Bailey, G. L., Hampers, C. L., Hager, E. B., Merrill, J. P.: uremic pericarditis. Circulation, Vol. XXXVII, pp. 582-592, Sept. 1968.
2. Richter, H. B. and O'Hare, J. P.: The heart in chronic glomerulonephritis. New England Journal of Medicine, Vol. 214, p. 824, 1936.
3. Skov, P. E., Hansen, H. E., Spencer, E. S.: Uremic pericarditis. Acta Medica Scandinavica, Vol. 186, No. 5, pp. 421-428, 1969.
4. Alfrey, A. C., Goss, J. E., Ogden, D. A., Vokel, J. H. K., Holmes, J. H.: Uremic hemopericardium. American Journal of Medicine, Vol. 45, No. 3, pp. 391-400, Sept. 1968.
5. Cutforth, R., Freeman, J., Mitchell, R. N.: Uremic constrictive pericarditis. Medical Journal of Australia, Vol. 2, No. 5, pp. 239-242.
6. Traeger, J., Gonin, A., Delahaye, J. P., Francois, B., Plouchu, G., Fronent, A.: Pericardite uremique a evolution constrictive subargue. A propos d'une observation anatomo clinque chez un brightique traite por les epurations extra renales, au long cours. Lyon Med., Vol. 211, p. 383.
7. Tsaltas, T. T.: Comparison of various methods of dialysis, Subjective experiences and laboratory data. Transactions American Society for Artificial Internal Organs, Vol. 13, p. 29, 1967.
8. Nalliterokis, E., Morketos, S. G., Tsehon, G., Pandos, A. P.: Pericardite uremique avu hemopericarde et compression cardiaque. A propos de deux observation. Presse Med., Vol. 76, p. 265, 1968.
9. Moraski, R. E., Bousvaros, G.: Constrictive pericarditis due to chronic uremia. New England Journal of Medicine, Vol. 281, pp. 542-543, 1969.
10. Beaudry, C., Nakomato, S. and Kolff, W. J.: Uremic pericarditis and tamponade in chronic renal failure. Annals of Internal Medicine, Vol. 64, No. 5, pp. 990-995, 1966.
11. Hager, E. B.: Clinical observation on five patients with uremic pericardial tamponade. New England Journal of Medicine, Vol. 273, No. 6, pp. 304-306, 1965.
12. Collins, H. A., Killen, D. A., Gobbel, W. G., Ginn, H. E.: Pericardiectomy for uremic pericardial tamponade. Annals of Thoracic Surgery, Vol. 9, No. 4, pp. 327-333, 1970.

THE PROBLEM OF PENICILLIN ALLERGY

JAY W. SMITH, F.A.C.P.

Essentially every patient treated with penicillin becomes sensitized. Immunologists have shown that most individuals produce an immunological response after penicillin therapy, and one group has reported evidence of an immunological response in 100 percent of treated patients.[1] Fortunately, very few of these patients develop allergic reactions clinically when retreated with the drug. Why is this? There is no doubt that strictly immunological considerations – the characteristics of antigens and antibodies in individual patients – explain this in part. Although there have been tremendous advances in the understanding of penicillin allergy in the past decade, the basic understanding of why some patients develop hypersensitivity reactions and some do not has not been established. Let us now consider briefly the immunology of penicillin allergy.

First, consider the antigen. Although patients with pencillin allergy occasionally react to intradermal penicillin, studies have shown that the unmodified penicillin molecule itself is probably not the major antigenic determinant. It is most important to realize that simple organic molecules, such as penicillin and most other drugs, are required to form stable covalent bonds with larger molecules, primarily proteins, before they become antigenic. Thus penicillin behaves as a hapten in immunological reactions; it will bind antibody in its unaltered state, but must combine with a macromolecule to become a potent sensitizer.

Penicillin binds to proteins by forming a penicilloyl derivative.[2, 3] Fig. I shows that the penicilloyl derivative differs from the original penicillin molecule in that the B-lactam ring has opened and there is a stable attachment to an epsilon amino group on a lysine residue. As indicated, it can arise either by a direct coupling mechanism or through the intermediary formation of penicillenic acid.[4] Penicillenic acid also forms from penicillin in aqueous solutions and can be found in vials of penicillin.[5]

There is considerable evidence that the penicilloyl derivative is a major antigenic determinant in pencillin allergy. First, antibodies to penicillin participating in hemagglutination, precipitating, and passive cutaneous anaphylaxis reactions could be specifically inhibited by the

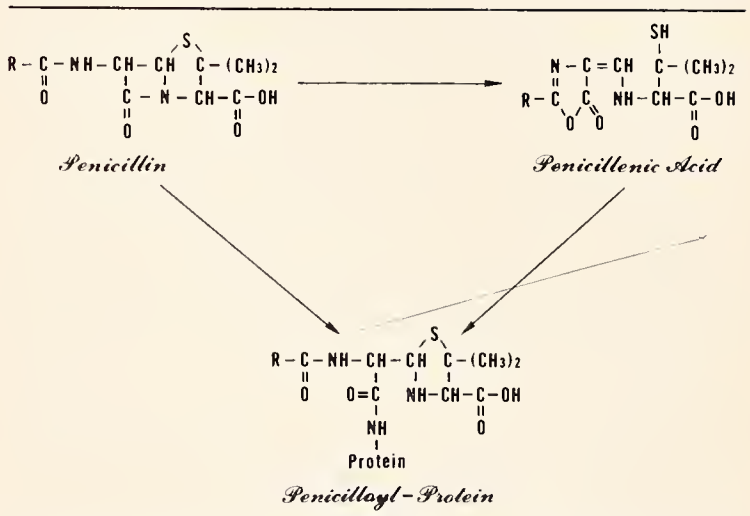


Figure I

The formation of penicilloyl protein from penicillin and penicillenic acid.

FIG. II

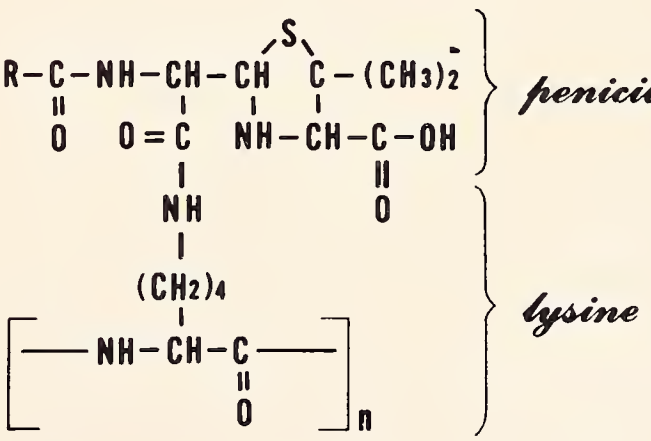


Figure II

Penicilloyl – Polylysine

univalent hapten, penicilloyl-epsilon-amino caproic acid.[3, 4, 6] Second, a high percentage of patients with histories of penicillin allergy developed immediate cutaneous responses when skin tested with penicilloyl polylysine.[3]

Penicilloyl polylysine, the substance most frequently used for skin testing individuals with penicillin allergy, is shown in Fig. II. Polylysine is a series of lysine residues coupled together in peptide linkage with the epsilon amino group available for coupling to penicillin or penicillenic acid. The product of this coupling reaction, penicilloyl-polylysine, is not antigenic, but is immunogenic and is as effective as penicilloyl-protein derivatives in inducing wheal and erythema responses.[7]

How good is the skin test in clinical practice? The most obvious question to answer is how many patients with a history of penicillin allergy will have a positive skin test. Table I shows that reported figures range from 23 to 90%.[3, 8-12] Although no one can totally explain this wide range of results, some of the variance probably relates to the adequacy of history and to the length of time elapsed between the penicillin reaction and the skin test. Budd et al[10] reported positive tests in 90 percent of students who had a well documented allergic reaction to an injection of penicillin administered three months prior to the skin test. In those students with an alleged history of a hypersensitivity reaction to penicillin in the distant past positive skin tests were observed in 27 percent.

TABLE I

Relationship of Penicilloyl-Polylysine Skin Testing
To A History of Penicillin Allergy

AUTHOR (Reference)	PERCENT POSITIVE SKIN TESTS
Parker (3)	75% (45/59)*
Rytel (8)	35% (15/43)
Brown (9)	40% (396/1003)
Budd (10)	90% (20/22)
Finke (11)	37% (44/120)
Smith (12)	22% (7/32)

*Numbers in parenthesis refer to number positive over number tested.

The most important question to be answered clinically is how many patients with a negative skin reaction when tested with penicilloyl polylysine will react to penicillin when challenged with therapeutic doses. That is, when can a physician safely use penicillin? The reported rates of reaction to penicillin after negative skin tests have all been less than 1 percent. None of these reactions has been of the life threatening anaphylactic type,[13] but certainly more experience must be accumulated because of the relative rarity of anaphylactic reactions. Nevertheless, allergic reactions occasionally occur to penicillin after negative skin testing with penicilloyl polylysine. Some of these adverse reactions are undoubtedly mediated by antigenic determinants other than penicilloyl. Levine et al[14] have found that these patients have usually had positive skin reactions to minor determinants which are not completely defined, but probably consist of some of the derivatives shown in Fig. III. All these derivatives are capable of becoming antigenic by forming stable covalent bonds with proteins.[15] It is assumed that these simple chemicals elicit wheal-and-flare reactions by

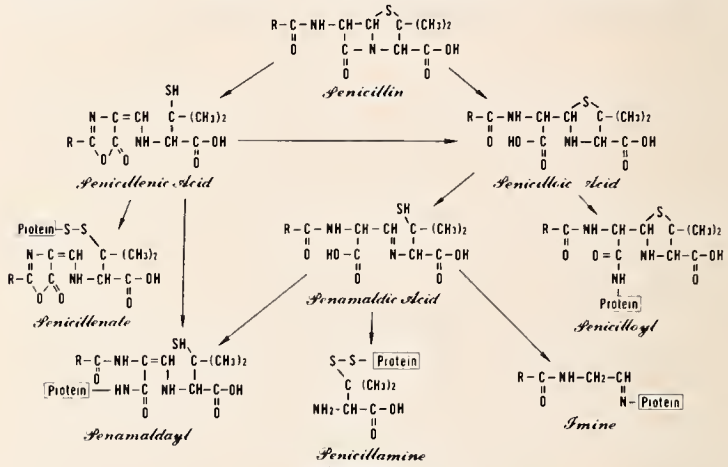


Figure III

Derivatives of penicillin capable of forming covalent bonds with proteins.

first reacting chemically with soluble proteins in the skin test site to form the appropriate multivalent conjugates which elicit the reaction. Thus, although the penicilloyl derivative is the major antigen responsible for penicillin allergy, it is not the universal antigen. Clearly, other antigenic derivatives of penicillin product hypersensitivity reactions.

No discussion of an immune response would be complete without a few words about the responsible antibody. Just as there are numerous antigens involved in penicillin allergy so are there numerous antibodies. Antibodies to penicillin determinants have been reported in all five classes of immunoglobulins.[16, 17]

IgG antibodies specific for known derivatives of penicillin have been found in about 50 percent of patients with penicillin allergy,[1] but only to penicillin induced hemolyic anemia have they been definitely related pathogenically.[18] The definitive role IgG antibodies play in penicillin induced vasculitis, glomerulitis, and serum sickness is not known. In fact, there is evidence that high titers of IgG penicillin antibodies may protect the host against penicillin reactions.[19] They probably act as blocking antibodies by competing with IgE antibody for antigen.

IgM antibodies to penicillin have been detected by hemagglutination reactions using normal erythrocytes sensitized with penicillin; an agglutination reaction occurs when sera from patients containing IgM antibodies are added. Although the incidence of sera containing IgM

antibodies is higher in those patients with positive skin tests, the role of IgM antibodies in clinical penicillin allergy is not defined. Even though one group of investigators associated high titers of IgM antibodies with erythemic maculopapular rashes,[19] IgM antibodies probably play little, if any, role in penicillin hypersensitivity as it presents clinically.

IgE antibodies are those which sensitize skin and mediate anaphylaxis in humans. They are detected by a wheal-and-flare reaction on direct skin testing of the individual. These antibodies are quite well correlated with penicillin allergy clinically. In one study patients with only IgM or IgG antibodies did not manifest reactions when treated with penicillin; however, a considerable number of those with IgE antibodies reacted to penicillin when challenged.[19] Thus, most immediate allergic reactions to penicillin are mediated by IgE antibodies, not IgG or IgM antibodies.

Thus, what started out as a rather simple concept — penicillin acts as a hapten and binds to protein forming an antigen which produces antibody — has become a rather complicated affair. Immunologists now clearly recognize the marked heterogeneity of the immune response. With regard to the antigen, there are marked differences in haptenic specificity; the reasons some patients form penicilloyl derivatives while others do not are not known. Likewise, the reasons for the heterogeneity of the antibody response — why some individuals produce IgM antibodies while others produce IgE — are not known. Few of the factors determining which patients will become sensitized to penicillin are known. An equally complex problem is determining why some patients with penicillin IgE antibodies react adversely when challenged with penicillin and others do not. Thus, these immediate problems of penicillin allergy in clinical medicine today provide the challenges which undoubtedly will be conquered by immunologists and clinical allergists in the future.

REFERENCES

1. Levine, B. B., Redmond, A. P., Fellner, M. J., Voss, H. E., and Levytska, V.: Penicillin Allergy and the Heterogeneous Immune Responses of Man to Benzylpenicillin. J. of Clin. Invest. 45:1895, 1966.
2. Levine, B. B., and Ovary, A.: Studies on the Mechanism of the Formation of the Penicillin Antigen. III. The N-(D-O-benzylpenicilloyl) group as an antigenic determinant responsible for hypersensitivity to penicillin G. J. Exper. Med. 114:875, 1961.
3. Parker, C. W., Shapiro, J., Kern, M., and Eisen, H. N.: Hypersensitivity to Penicillenic Acid Derivatives in Human Beings with Penicillin Allergy. J. Exper. Med. 115:821, 1962.
4. Thiel, J. A., Mitchell, S., and Parker, C. W.: The Specificity of Hemagglutination Reactions in Human and Experimental Penicillin Hypersensitivity. J. Allergy 35:399, 1964.
5. Parker, C. W.: Penicillin Allergy. Am. J. Med. 34:747, 1963.
6. Parker, C. W., deWeck, A. L., Kern, M., and Eisen, H. N.: The Preparation and Some Properties of Penicillenic Acid Derivatives Relevant to Penicillin Hypersensitivity. J. Exp. Med. 115: 803, 1962.
7. Parker, C. W.: Immunochemical Mechanisms in Penicillin Allergy. Fed. Proc. 24:51, 1965.
8. Rytel, M. W., Klion, F. M., Arlander, T. R., and Miller, L. F.: Detection of Penicillin Hypersensitivity with Penicilloyl Polylysine. J.A.M.A. 186:894, 1963.
9. Brown, B. C., Price, E. V., and Moore, M. D.: Penicilloyl Polylysine as an Intradermal Test of Penicillin Sensitivity. J.A.M.A. 189:599, 1964.
10. Budd, M. A., Parker, C. W., and Norden, C. W.: Evaluation of Intradermal Skin Tests in Penicillin Hypersensitivity. J.A.M.A. 190:203, 1964.
11. Finke, S. R., Grieco, M. H., Connell, J. T., Smith, E. C., and Sherman, W. B.: Results of Comparative Skin Tests with Penicilloyl Polylysine and Penicillin in Patients with Penicillin Allergy. Am. J. Med. 38:71, 1965.
12. Smith, J. W., Johnson, J. E. and Cluff, L. E.: Studies on the Epidemiology of Adverse Drug Reactions II. An Evaluation of Penicillin Allergy. N.E.J.M. 274:998, 1966.
13. McGovern, J. P., Roberson, C. E., and Stewart, G. T.: Incidence and Manifestations of Penicillin Allergy. In Penicillin Allergy. Stewart, G. T., and McGovern, J. P. (Eds) American Lecture Series, 1970, Charles C. Thomas, Springfield, Ill.
14. Levine, B. B., and Zolov, D. M.: Prediction of Penicillin Allergy by Immunological Tests. J. of Allergy. 43:231, 1969.
15. Stewart, G. T., Butcher, B. T., and McGovern, J. P.: Penicillin Allergy: The Nature of the Problem. In Penicillin Allergy. Stewart, G. T., and McGovern, J. P. (Eds) American Lecture Series, 1970, Charles C. Thomas, Springfield, Ill.
16. Gleich, G. J., and Stankievic, R.: Immunoglobulin Classes of Antibenzylpenicilloyl (BPO) Antibodies in Human Sera. (Abstr.) J. Allergy 43:168, 1969.
17. Gleich, G. J., Berger, R. C., and Stankievic, R.: Antigen Combining Activity Associated with Immunoglobulin D. Science 165:606, 1969.
18. Petz, L. D. and Fudenberg, H. S.: Coombs Positive Hemolytic Anemia Caused by Penicillin Administration. N.E.J.M. 274:169, 1966.
19. Levine, B. B.: Immunologic Mechanisms of Penicillin Allergy. N.E.J.M. 275:1115, 1966.

PSYCHOLOGICAL ASPECTS OF DESERT SURVIVAL

HOWARD S. GRAY, M.D.

This paper is concerned with the psychological problems associated with life-threatening situations with particular emphasis on the probabilities for noneffective behavior in a trauma produced by being stranded in a desert. Man has been threatened by or subjected to episodes of catastrophe since recorded history. In more recent years there has been reported a considerable body of data relative to the behavior of groups and individuals under disaster conditions. Such data include numerous observations and studies of: 1. combat personnel in World War I, World War II and Korea, 2. the effects of massive aerial bombardment in population centers, 3. spontaneous civilian disasters such as fires, tornados, hurricanes, floods, and explosions, as well as the atomic disasters of Hiroshima and Nagasaki. From these extensive and varied experiences it is possible to construct theoretical models that illustrate general conclusions regarding behavior under external stress which may be useful in delineating areas where prevention and management technics can be employed.

We should begin with a number of basic generalizations:

1. Carelessness is the main cause of trouble.
2. The art of survival can be learned.
3. Man can endure physically and mentally far more than is generally supposed provided the individual knows what to do.

REACTIONS TO DANGER

The first model to be explored is based on the ability of human beings in a disaster situation to receive and act on danger signals. As might be expected, persons have varying capacities in this respect which can be viewed as a continuum in the effectiveness of response to danger. Tyhurst observes that only twelve to twenty percent of persons exposed to a civil disaster could be considered to have functioned in an effective manner.[1] It seems evident that only a relative minority of persons are able to quickly grasp the relevant aspects of a danger situation and utilize this information for appropriate and constructive action. The majority of persons, when confronted with immediate threat or actual presence of a major danger, are irresolute or are unable to make decisions and characteristically are described as docile and suggestable. They are afraid. In contrast, the effective minority state that while tense or excited they were too busy to remember any feelings or sensations of fear. It can be concluded that while a majority can clearly perceive the danger in an environment, they are relatively incapable of utilizing this information for constructive purposes. This demonstrates a lack of decision making ability. Such persons literally demand leadership and in many cases the phenomenon of the emergent leader arises as a response to this demand.

Another minority of persons, probably ten to twenty-five percent, have even more serious difficulty in coping with disaster that they display helpless or seemingly disorganized behavior. Some of this group react to danger much like a frightened child and exhibit dependent, helpless patterns of behavior. Others make primitive efforts to escape danger by either blind flight or aimless activity. Still others psychologically withdraw from the situation and appear apathetic, dazed or mute. Seemingly this group of persons is incapable of appropriate action, even when given speeific instructions.[2] For the average person, the discomfort of intense heat, possible loss of contact with others, the re-experiencing of early childhood fears of darkness and other groundless anxieties make for psychologic maelstrom. In this milieu misinterpretation of observations and misjudgments are compounded, one upon the other, until abject despair is overwhelming.

In contrast, the successful survivor exercises forethought and does not panic. He is prepared to get lost. He knows the terrain or has maps of the area. He is not alone and, most importantly, he files an itinerary with someone else. In addition, he carries some form of survival kit.

The second personality trait of the successful survivor is that he does not panic. He assumes and accepts leadership willingly and evaluates the situation realistically and appropriately with a goal of planning his rescue.

BEHAVIOR IN VARIOUS PHASES OF DISASTER

A second conceptual model that is considered useful for the purposes of this discussion is based on the examination of behavior in the various time phases of a danger. Such a model permits an examination of the factors that may be involved in the prevention and treatment of behavorial problems at any particular stage of the disaster. The time behavior model to be presented comprises five time periods.

1. **Pre-danger Period.** This period can be said to exist whenever there is a high probability that danger will occur. It is characteristic for behavior during this period to consist of underactivity, or noneffectiveness, insofar as taking constructive measures to prepare for danger. Man seeks always to lower his level of tension. Therefore, to consider seriously the prospect of being confronted by a life-threatening situation can only increase one's level of anxiety. Therefore, it is not surprising that during this pre-danger period most persons deny that a problem exists and often press on in their journey, resulting in increased distance from possible rescue sources and further isolation. Sometimes an individual will adopt various rationalizations which prove to him that such catastrophe will never occur. These feelings can be included under the "It can't happen to me" attitude.

2. **Warning Period.** The warning period is described as that time in which the individual becomes aware of imminent danger. When applied to being lost on a desert, this period varies from

minutes to hours duration. Noneffective behavior during this time is generally manifested by over-activity, sometimes to the point of panic, which is defined as irrational behavior in which judgment and consideration of reality factors are so poor that self-destructive acivity may occur. More typically, however, behavioral phenomena during this period includes apprehensiveness, restlessness, tearfulness and the like. At times flight is observed, as when an individual abandons the safety of his automobile and embarks upon a desperate trek toward a fantasied haven. It should be understood that flight in itself cannot be considered abnormal behavior. However, when applied to survival in a desert setting leaving one's automobile is all too frequently suicidal.

3. **Danger Period.** During this time the lost individual is confronted, undeniably, with his predicament. Patterns of either effective or noneffective behavior begin to form and lead into the fourth period.

4. **Recoil Period.** During this time the individual has time to take stock of himself, note the condition of his surroundings, and begin to initiate constructive activity. A careful assessment is made of the tools of survival present and previously learned survival technics are called upon. Recoil usually occurs within minutes. When it is delayed there is typical under-activity with helplessness, aimless wandering, dazed apathy or muteness. These manifestations have frequently been referred to as disaster fatigue. It should be emphasized again that the majority of persons confronted with a life-threatening situation will not respond effectively, and it is up to the minority in any group to assume leadership and plan appropriate courses of action.

5. **Post Danger Period.** During this time tasks of resolution and rehabilitation predominate. Persons who have been injured or who have lost loved ones or valuable possessions slowly begin to appreciate the extent of their problems. While grief reactions do occur, in general there is more of a tendency towards anger and resentment.[4] Anger and resentment are commonly directed against whatever person or persons can be blamed for the tragedy. Often this is the driver of the vehicle, or, as was demonstrated several months ago in Phoenix, against local authorities and agencies responsible for rescue operations. Later there may be recriminations as anger seeks convenient targets. Outsiders who have not suffered from the disaster may unwittingly find themselves the targets of such resentment. Hopefully, the post danger period can be used as an educational time to alert potential victims of the hazards of desert travel and to acquaint them with survival technics. It is apparent that the best method of preventing noneffective behavior in a life-threatening circumstance lies in planning and training for such an eventuality. While this is not very palatable, it is the only effective method of choice. The use of mass communications media such as television and newspapers plays an important role in areas where such danger can be anticipated. Publicity and distribution of survival pamphlets through such agencies as service stations, automobile clubs and the like demonstrates to persons that they do not face danger alone. In addition, it creates pressure on the individual to perform effectively and negates tendencies toward noneffective behavior. Finally, the awareness of survival technics and the knowledge that appropriate effective rescue operations are in existence may mitigate against self-destructive reactions to danger.

SUMMARY

This paper has attempted to demonstrate the problems of noneffective behavior that may be expected in disaster situations with particular emphasis on desert survival. Two conceptual models which permit examination of various pertinent factors that are concerned with the individual's effectiveness of response to danger were presented. One model concerns the frequency and types of reactions to danger situations which may be expected from an average population sample. The second model is based on a review of behavior in the various time phases of a danger. These models provide a basis for methods to prevent and manage psychological problems encountered in desert survival.

REFERENCES

1. Tyhurst, J. S.: Individual Reactions to Community Disaster; Natural History of Psychiatric Phenomena, Am. J. Psychiat. Vol. 107 (April) 1951.
2. Glass, A. J.: Psychological Aspects of Disaster; J.A.M.A., Vol. 171, 2, 1959.
3. Gallagher, J. Q.: Survival — physiologic and psychologic aspects; Rocky Mtn. Med. Jour., Vol. 66, 10, Oct. 1969.
4. Glass, A. J.: Psychological Aspects of Disaster; J.A.M.A., Vol. 171, 2, 1959.

THE NEIGHBORHOOD HEALTH CENTER: CARE FOR THE MEDICALLY INDIGENT PART I

WILLIAM C. NEMETH

RESPONSIVENESS TO COMMUNITY NEEDS

Health care in our country is something less than optimal. It is inequitably distributed, crisis oriented and financially prohibitive. The poor are one sector of our society immensely effected by this inadequate medical care system. In response to this growing group of medically indigent, the Office of Economic Opportunity in 1964 started a Neighborhood Health Center Program to help cope with those deficiencies of our medical care system most affecting the poor.

The Neighborhood Health Center program is gaining ground. There are now 75 facilities in our country, the newest of which is the El Rio-Santa Cruz Neighborhood Health Center situated in the Model Cities Neighborhood in Tucson and serving the residents of that area.

Studies compiled between 1966 and 1968 pointed to this neighborhood as an area of severe poverty and poor health. For example, 48% of the population was in families with annual income under $3600. Almost half of the housing units were substandard. Infant mortality rates were about 50% higher in the Model Cities Neighborhood than in the rest of Tucson. The incidence of infectious disease was several times higher in the Model Cities Neighborhood than in the rest of the city.[1]

The El Rio-Santa Cruz Neighborhood Health Center is headed by Dr. Herbert Abrams, Chairman of the Department of Community Medicine, University of Arizona College of Medicine. He has brought with him many of the operational concepts that he found particularly useful at the Martin Luther King Neighborhood Health Center in Chicago where he was director from 1966 to 1968. Several of these concepts are extremely interesting as they may prove to have wide applicability in other efforts to upgrade the quality of medical care in our country.

The foremost stated objective of the El Rio-Santa Cruz Neighborhood Health Center is to provide for 10,000 people, medical care service characterized by comprehensiveness, high quality, continuity and personal concern for the patient.[2] This is of course not an easy order to fill.

A second major objective of the El Rio-Santa Cruz Neighborhood Health Center is simply to involve residents of the neighborhood in the health care program. This has been undertaken in large fashion and on several different levels. Most interesting of these is the citizens' "Policy Board" of the Neighborhood Health Center. This elected group of officials, representing various cultural and geographical areas of the neighborhood ("Barrios"), provides a source of feedback to the administrators of the center and is consulted on matters pertaining to policies affecting the operation of the center. The members of the board are all residents of the community — they are themselves consumers of the services that the Neighborhood Health Center provides. It is hoped that this board will play a major role in making health care more responsive to the actual needs of the people. Decisions that have been made thus far include: Naming the Center, setting the hours of operation of the center, and approving the appointments of professionals and non-professionals to the Neighborhood Health Center staff. (The Board has "veto" power in the hiring of all health center personnel.) In short, the board allows for an integrative form of administration — it eliminates the more stringent "directive" form of administration commonly seen in health care delivery today.

One of the by-products of this increased administrative involvement on the part of the neighborhood residents is the redistribution of power so that it is more equitably based. Minority groups see "white control of major social institutions resulting in both conscious racism and perhaps unconscious institutional patterns that are antagonistic to the interests of both minority individuals and the minority community as a whole."[3] With the involvement of neighborhood residents in the decision making process at the health center, the responsibility for the health care program must be partly shouldered by the local resident consumer. It is hoped that the Neighborhood Health Center will become an example of what a community can accomplish from within given proper guidance and encouragement.

Another aspect of community participation in

the Neighborhood Health Center is the employment of Model Cities Neighborhood residents in staffing the health care facility itself. Of the 85 employees of the Neighborhood Health Center over 60% are residents of the Model Cities Neighborhood. An even larger percentage of the employees are from minority groups. These are two main benefits derived from the extensive employment of the local residents — enhanced communication and economic betterment. It is felt that employees of the Neighborhood Health Center will encourage participation in the health program by acting as direct liaisons between the center and the people in the community. It is also felt that the provision of jobs has provided economic opportunities for many people within the neighborhood. Indeed the Health Center will bring increased amounts of capital into the hands of those living in the Model Cities area.

A third important objective of the El Rio-Santa Cruz Neighborhood Health Center involves the extensive use of educational programs to enhance communication with the community residents and to provide opportunities for health center employees to further their training.

Good preventive medicine involves an active educational program — one which will alert the community residents to the resources available for answering questions and solving their problems. The Neighborhood Health Center employs a full-time Health Educator. Programs are now being set up that will provide information to the community on such things as Drug Addiction, Alcoholism, Mental Illness and Family Planning. This program will of course be particularly responsive to the individual needs of the residents of the community.

Employees of the Neighborhood Health Center are encouraged to further their training in the medical area of their choice. On-the-job training programs will be provided and time will be made available for all those interested to attend outside classes. Enhanced vertical mobility will provide added incentive to those who have found it difficult to further their educational training.

Having considered a few of the important objectives of the El Rio-Santa Cruz Neighborhood Health Center, it should become apparent that this medical care program offers a certain responsiveness that many other programs fail to project. The ultimate success of this system cannot be measured simply in terms of decreasing rates of infant mortality, infectious disease and the like. The fact that medical care is given as a right rather than a privilege seems to have a more profound implication.

REFERENCES

1. Abrams, Herbert K.: "Health Service General Project Grant (#93071)," Nov. 1, 1968, submitted to the Department of Health, Education, and Welfare.
2. Ibid., p. 22.
3. Feingold, Eugene: "A Political Scientist's View of the Neighborhood Health Center as a New Social Institution," Medical Care, Vol. 8, No. 2, March-April, 1970, p. 110.

THE NEIGHBORHOOD HEALTH CENTER: CARE FOR THE MEDICALLY INDIGENT PART II

JOHN HERINGER

ORGANIZATION AND PHYSICAL RESOURCES

You have just heard the rationale behind the Tucson El Rio-Santa Cruz Neighborhood Health Center (NHC), the important role of community participation in this project, and the services and opportunities for employment and advancement which the NHC offers to the people in the Model Cities area. The second part of our presentation will focus on the composition and function of the Health Care Team and a description of the physical resources available to the physician practicing at the NHC.

One of the many new concepts in health care which is being put into practice at the NHC is the Health Care Team. There are two health care teams, each consisting of one internist, one pediatrician, one or two general practitioners, three or four registered nurses — all training to be family nurse—practitioners—and three or four family health workers. The remainder of the staff consists of lab technicians, pharmacists, licensed practical nurses, social workers, x-ray technicians, a nutritionist, a health educator, a training coordinator and a psychiatrist.

To personalize the delivery of health care, the

two health care teams are divided into seven miniteams. Each miniteam consists of a physician, a registered nurse and a family health worker, and is responsible for 350 families. After a patient's first visit, all future visits are scheduled with the same team, in order that the patient get to know and trust his physician and nurse, and so his family health worker can keep in touch with the patient and his family to be certain that those who need medical care are receiving it.

In order to better understand how the miniteam functions as a unit, let un consider the members of the team individually. First, the family health worker is another new concept in use at the NHC. The family health workers are residents of the Model Cities area and represent various ethnic, cultural and racial backgrounds: Mexican-American, Black, Papago, and Yaqui. The role of the family health worker is to visit homes in her area, to locate those who should be seen at the NHC, and to help those who are sick, under the supervision of her nurse and doctor. In addition, they play an important part in community health education. All family health workers receive a concentrated 12 week training program consisting of familiarization with various community resources and instruction in the rudiments of anatomy, sepsis and asepsis and the basic signs and symptoms of disease. Emphasis is placed on the detection, rather than treatment, of various problems including housin, sanitation, mental and physical health and legal problems. They also receive special instruction in nutrition, the growth, development and major disease problems common to specific age groups, Red Cross first aid and home nursing courses, and 20 hours of psychiatry. The family health workers work closely with the social workers and the NHC psychiatrist in concentrating on the social and mental aspects of comprehensive health care. Having completed their basic training, the family health workers have the opportunity to continue their education in either of two fields: social services or nursing. Each staff member is allow six paid hours per week to take classes at Pima College or the University of Arizona, and all are encouraged to do so.

A second member of the miniteam is the family nurse prectitioner. These nurses are being trained on the job for 12 months; each will be continually supervised by the physician with whom she works in many aspects of pediatrics, obstetrics, adult medicine and mental health. In pediatrics, the goal is for the family nurse practitioners to care for one-half of all the well — baby checkups and minor respiratory ailments, referring any problems to the doctor. They will see many of the adults for general histories and physicals, and will largely manage certain chronic disease cases. In obstetrics, they will probably see one-half of the prenatal visits, one-half of the post partum visits, and one-half of the family planning visits. They will also provide much needed counselling services which the physicians seldom have time to do. Accomplishment of these goals will allow the physician to devote more time to urgent medical problems.

The goal of the miniteam is to provide good, continuous health care, and to allow the head of the team, the physician, time to concentrate on the major aspects of disease treatment and medical care. The seven primary physicians take turns on duty for 24 hours per day, seven days per week. All physicians see patients on an appointment system with the exception of emergencies. In addition to the full-time physicians, part-time consultants — including surgeons, obstetricians, an opthalmologist, an optometrist, a dermatologist, an orthopedist, and an ear, nose and throat specialist — each attend regular sessions at the NHC. Other specialties and consultations are available should they be needed. In addition, all physicians on the NHC staff hold faculty appointments at the University of Arizona College of Medicine.

One-third of those patients requiring hospitalization can be sent to Pima County Hospital because their annual income falls below the county welfare line of $3000 for a family of four. Since Arizona is one of the two states without Medicaid, hospitalization of the other two-thirds of these patients will remain a problem until Medicaid or some similar system is adopted in Arizona. At present, each staff physician has admitting privileges at the Tucson hospitals, and these patients will be distributed equally among the various Tucson hospitals.

A major interest to the physician contemplating practicing at the NHC is the fact that it has the equipment to function as a complete medical clinic. On walking through the NHC, it is difficult to believe that the same building was once a detention center for juvenile delinquents. The NHC has complete x-ray facilities, a complete laboratory, pharmacy and minor surgery room,

and their own transportation system for the patients. In short, the NHC offers the physician the opportunity and facilities to practice good medicine.

In regard to medical education, the goal of student participation in the NHC is to produce physicians with a "greater family and community orientation."[1] The NHC will offer medical students the chance to work with the health care team, especially with the family health worker in his preclinical years. Later, the student may elect to take a clerckship in community medicine and work directly with the physicians at the NHC.

In summary, the NHC is certainly a laudable addition to the medical facilities in Tucson. The NHC involves all aspects of patient care including transportation to the center, personal care by the physicians and nurses, ready availability of lab tests, x-rays and pharmaceuticals, social and psychiatric care, and follow-up care by the family health worker. It also allows the physician to practice excellent medicine and provides for community employment and personnel advancement. The Tucson NHC is well on the way to accomplishing its major objective of providing "for a poverty population of 10,000 persons comprchensive, high quality, continuous, personal medical care; prevention, treatment, rehabilitation, outpatient, in hospital and homc care; family planning, mental health care and social services."[1]

REFERENCES

1. Abrams, Herbert K.: Application for Health Service General Project Grant 93071, November 1, 1938, submitted to the Department of Health, Education and Welfare.
2. Bryant, Thomas E.: "Goals and Potential of the Neighborhood Health Centers," Medical Care, March-April, 1970, page 93.
3. Silver, Henry K., Ford, Loretta, C., and Day, Lewis R.: "The Pediatric Nurse-Practitioner Program," Journal of the American Medical Association, April 22, 1968, 204:88-92.
4. White, Kerr L.: "Primary Medical Care for Families — Organization and Evaluation," The New England Journal of Medicine, October 19, 1967, 277:847-852.

COMMENTS BY

PETER D. MOTT, F.A.C.P.

It is significant in itself that the subject of Neighborhood Health Centers is on this program. It bodes well for the future.

The Neighborhood Health Centers have received a good deal of national attention in the medical and lay literature since their start only 6 years ago. Several hard questions need to be raised about these centers, however: How good are they? Do they cost too much? What is the role of nurse-practitioners in adult medicine? And will this help attract medical students into under-doctored areas?

I. How good are they as a medical care delivery model? Are they really different from traditional outpatient clinics?

The N.H.C. is quite different. It is a **planned** approach to meeting the specific health needs of a defined population (in this case 10,000 low income people). As such, and with the backing of the federal grant, the University, the County Government, it has been possible to put together a group with **appropriate** ratios of primary doctors to other specialists and the many supporting services, formed into teams with the doctors in charge of patient care but broadening the scope of care by delegating many tasks to nurse-praetioners, social workers, community health workers and others.

Unlike the usual out-patient department the program consists mostly of **fulltime** doctors supported by a full range of diagnostic services, providing continuous carc 24 hours per day, 7 days per week, in office, home and hospitals.

It's a high quality group practice. Our record system is unified and problem-oriented. We are developing an internal audit system for quality control. The Center is a teaching area for medical students; and we are under the constant surveillance of the recipients of care, the neighborhood people themselves. In these ways it differs strikingly from traditional out-patient clinics.

II. A second question. Are these Centers overly expensive?

It's true we are spending $1.2 million per year for 10,000 people or $120 per person. There are two points to be made, however: First, the additional services include all consulting services, psychiatry, socal services, nutritionist and health educator, a full pharmacy at no extra charge: everything in fact except dental care and the payment of hospital bills. Also included in the cost are a transportation system, an extensive training and job program for the unemployed, plus research and evaluation including computerized data collection. Morcover, such Centers always run into a tremendous backlog of unmet health needs in an underprivileged area.

The second point on costs is that similar pro-

grams have been shown to decrease hospital utilization, which will help contain costs in the future.

III. A third question. What should be the extended role for nurses in adult medicine?

We Internists are trailing the Pediatricians in developing new ways to extend ourselves to cover more patients. The Pediatric Nurse-Practitioner, at several prominent centers, is trained to handle, under the supervision of an M.D., large numbers of well child check-ups and the management of common respiratory infections, an estimated 75% of the patient load of a general Pediatrician.

Internists at Kansas, the Massachusetts General Hospital and Johns Hopkins Hospital have started nurse management clinics where nurses handle most of the visits of patients with reasonably stable diabetes, hypertension, chronic congestive heart failure, rheumatoid and osteoarthritis. In the practice of general Internal Medicine, however, the burden of patient numbers consists increasingly of the more routine of histories and physical examinations and — as with Pediatricians — common upper respiratory infections.

All of our Registered Nurses are being trained to handle this variety of patient problems. They will always be under doctor supervision, but they will allow us to function more often as consultants and hopefully cover more patients each.

IV. The final and hardest question is: Will Neighborhood Health Centers or other forms of medical care delivery attract medical students to the practice of medicine in under-doctored areas?

You'll recognize several features which were designed to make our project attractive to physicians. There is a definite income. High quality medicine is practiced. There are other advantages of group practice such as ready consultation, weekly conferences and time off. In our set-up there is the combination of service with teaching. Mainly there is the mutual participation in an experiment in redesigning medical practice with new roles and new health careers being developed.

These have attracted a high caliber of clinician. Time will tell if we can hold them and interest more in the future.

The attraction of medical students into careers as family doctors will depend not just on the development of models and training programs for Family Practitioners; but also, perhaps to a greater extent, on models which show that family care can be provided also by teams of Internists and Pediatricians practicing in systems which minimize the time spent in routine matters and maximize the satisfactions of high quality clinical medicine.

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This issue of Arizona Medicine is devoted to the scientific papers presented at the annual Arizona regional meeting of the American College of Physicians held in conjunction with the Arizona Society of Internal Medicine.

Since its founding in 1915, the basic role of the American College of Physicians has been to maintain and advance the highest possible standards in medical education, medical practice, and clinical research, with emphasis on the special interest of the internist.

To achieve these goals, much of the work of the College has been directed toward the continuing education of its members through the sponsorship of national and state meetings, postgraduate courses, and publication of the Annals of Internal Medicine.

The purpose of the Regional or State meetings of the College has been to provide a medium for the presentation of papers by members, but more particularly Associate members, who aspire to Fellowship in the College. This indication of continuing education and study has been one of the requirements for election to Fellowship. However, over the years, in order to further stimulate attendance one or more invited guests have been placed on the program, and always a representative of the College. This year we were especially honored to have the President-Elect, Hugh R. Butt, M.D. and the Executive Secretary, Edward C. Rosenow, Jr. M.D., in attendance, as well as A. McGehee, F.A.C.P., Professor of Medicine at Johns Hopkins University School of Medicine, and Richard S. Wilbur F.A.C.P., Executive Vice President of the A.M.A.

Since the College has remained rather aloof to the political and economic problems of Internists, several years ago the organization of State and National Societies of Internal Medicine came into being. In recent years, both the College and the Society have worked rather closely and now usually hold joint meetings. Many have thought there should be only one organization. But in this time of change and considerable discussion on the method of payment for, and distribution of, medical services; it seems to me the wisdom of separating the economic from the educational sections of our profession is worthwhile. Else we might very well have our search for increased knowledge and scientific advancement bog down in the partisanship of the present political and social upheaval.

The Arizona Society of Internal Medicine has done a remarkable job of representing the Internists in the state, in their dealings with the Arizona Industrial Commission, insurance companies, hospitals, and other third party providers of medical care. Let them continue to represent us in that role.

The Governors of the College who have represented Arizona and been responsible for initiating the local state meetings, have, I believe, provided a much closer fraternal and professional atmosphere amongst the Internists in the state, as well as a forum for scientific discussion. With the coming of a Medical School in the state it is hoped the high caliber of scientific education will continue to be more and more worthwhile.



Leslie R. Kober, M.D.
Guest Editor

Editor's Page

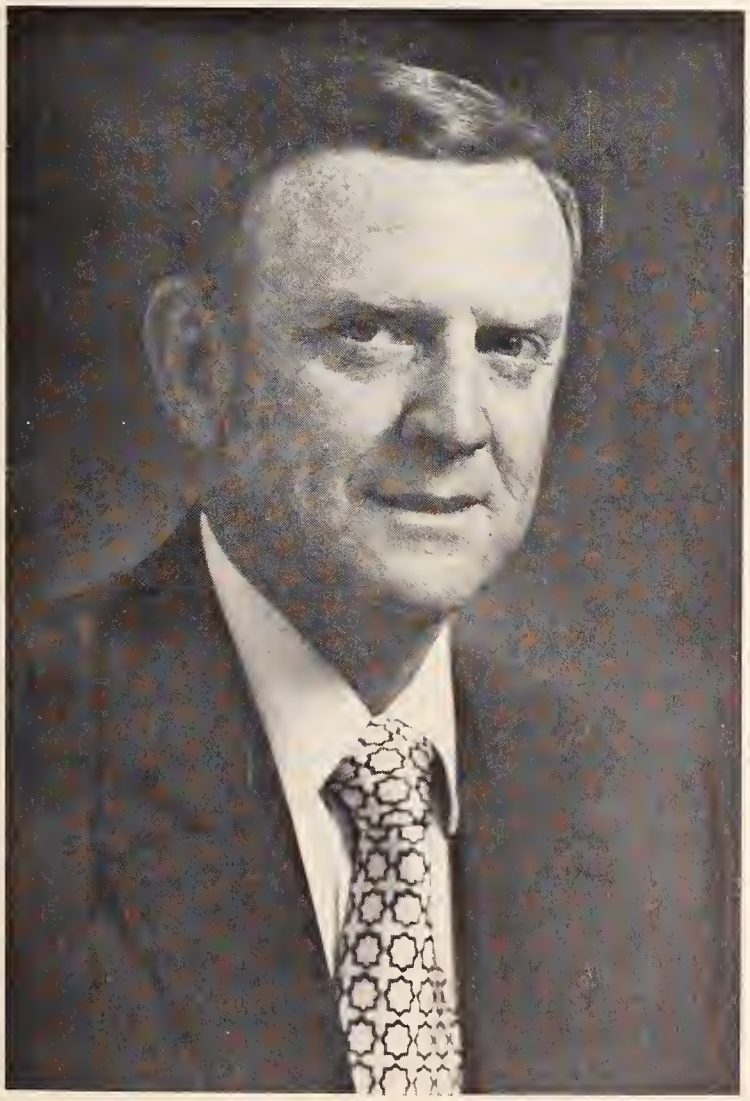
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President's Page



FRAGMENTATION

Much has been written about fragmentation of medical services. However, few of us are aware of the fragmentation of our professional activities and the harm that results from lack of solidarity.

Many factors contribute to the fragmentation of the medical profession. The progressive growth and development of specialty societies, and the involvement of these organizations in the socio-economics of health care services, have often resulted in the usurping of functions normally the prerogative of state medical associations.

County medical societies have also been a factor in fragmentating the medical profession. As the county societies have grown, personnel have developed and implemented numerous social, economical and legislative programs. This has frequently resulted in duplication and or dilution of similar programs of the state medical associations.

Government at all levels has also played a role in fragmentation. Often this happens when government sponsored health care programs result in groups of physicians competing against one another for the authority to direct such programs.

We can no longer afford division of our energies. Fragmentation hurts our profession. We need "*one*" voice to speak for all the physicians of the state. That voice must be the Arizona Medical Association.

James L. Grobe, M.D., President-Elect
Will assume the presidency
April 27, 1971

Dean's Page

INFORMATION MANAGEMENT AND MEDICAL PRACTICE

Competent information management is a key tool in the contemporary physician's armamentarium. Medical schools must impart information handling skills to their students if they are to achieve their goal of exemplary care of each patient. The College of Medicine, recognizing its importance, has devoted a two-day Seminar in the Social Perspectives in Medicine series to this subject. The program is shown in detail elsewhere in this issue of ARIZONA MEDICINE.

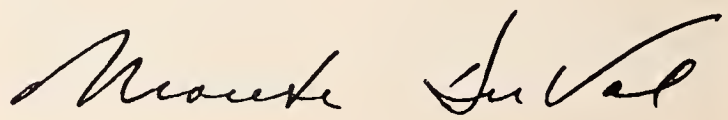
"Information management" may seem more relevant to librarians than physicians but in a very real sense patient management depends upon information management. Converting symptoms and physical and laboratory findings into a diagnostic and therapeutic formulation involves translating the experience of the clinical encounter into a precise language of words, numbers and graphic representations which accurately symbolize what is known about the patient. Without this information language the physician could not think about or recall later on what had been learned nor could he communicate with others.

Medical information management is undergoing a quiet but exciting revolution. The medical record, for example, is being restructured along logical and dynamic lines that provide the practicing physician with a powerful new clinical tool. Those who heard Dr. Lawrence Weed speak at the College of Medicine this fall about the "Problem-oriented Record" were greatly impressed with the importance and validity of his argument. The problem-oriented record assists the doctor in a scientific and orderly approach to gathering and recording clinical data and helps protect against errors and omissions that can so easily occur in a busy and difficult medical practice. Our school, like many others, is adopting Dr. Weed's format for our inpatient and outpatient records.

The structuring, maintenance and availability of medical records at the University Hospital will be the responsibility of the Medical Information Services. The term "record room" is no longer an adequate one to describe the highly specialized professional services to be provided by the medical records librarian and her staff. In addition to managing the record as a document, this department will share responsibility with the medical staff for the increasingly important matter of the medical audit. The competency of the physician and his institution is being judged largely by the quality and content of the medical record; the audit insures that care rendered is reflected in a complete, current and logical record which is updated at each point of treatment. The Medical Information Services Department of our University Hospital will reflect the latest thinking in these broad and essential areas of responsibility.

A different kind of information management arises when the care of the individual patient generates questions and problems that can often be solved by locating, within the vastness of the medical literature, the most helpful experience and advice of others. Our Arizona Medical Center Library is designed to help the user find the information he needs and to make the most valuable use of information resources. Comprehensive literature indexes are regularly published by the National Library of Medicine and many private scientific organizations. Bibliographic citations are becoming increasingly available by means of computer access, such as the AIM-TWX (Abridged Index Medicus by Teletype) unit just installed at the Medical Center Library. New methods of publishing, particularly microfilm and xerography, are making it possible for the physicians to build a permanent library rather than to borrow materials for a brief time.

Finally, a revolution is taking place in the communication of information. Communication networks spanning the state, the nation ,and ultimately the entire world will make information in written, pictorial, and spoken forms as easily available to the rural practitioner as to his urban colleague.



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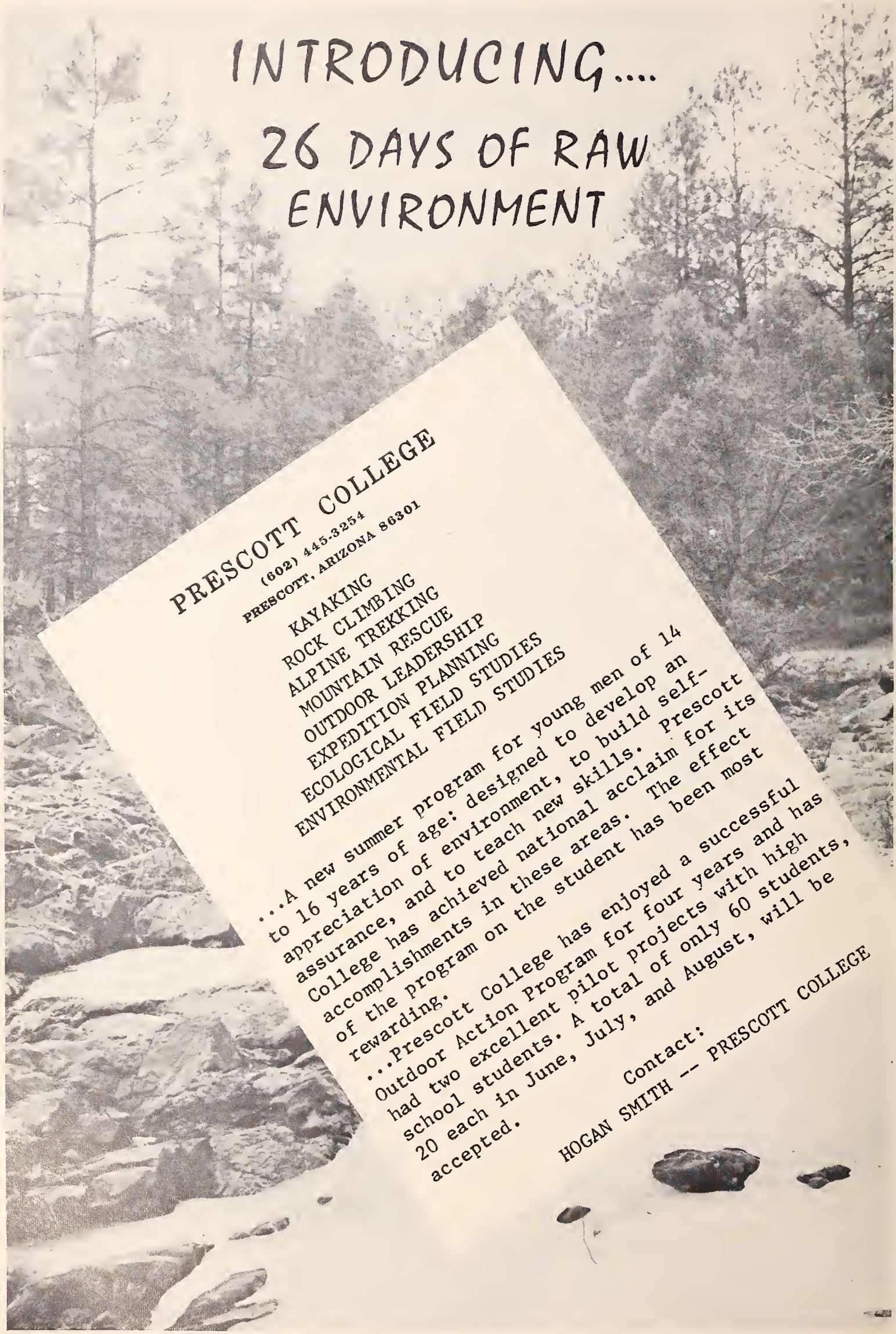
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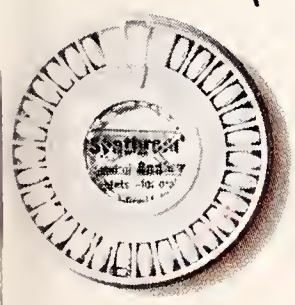
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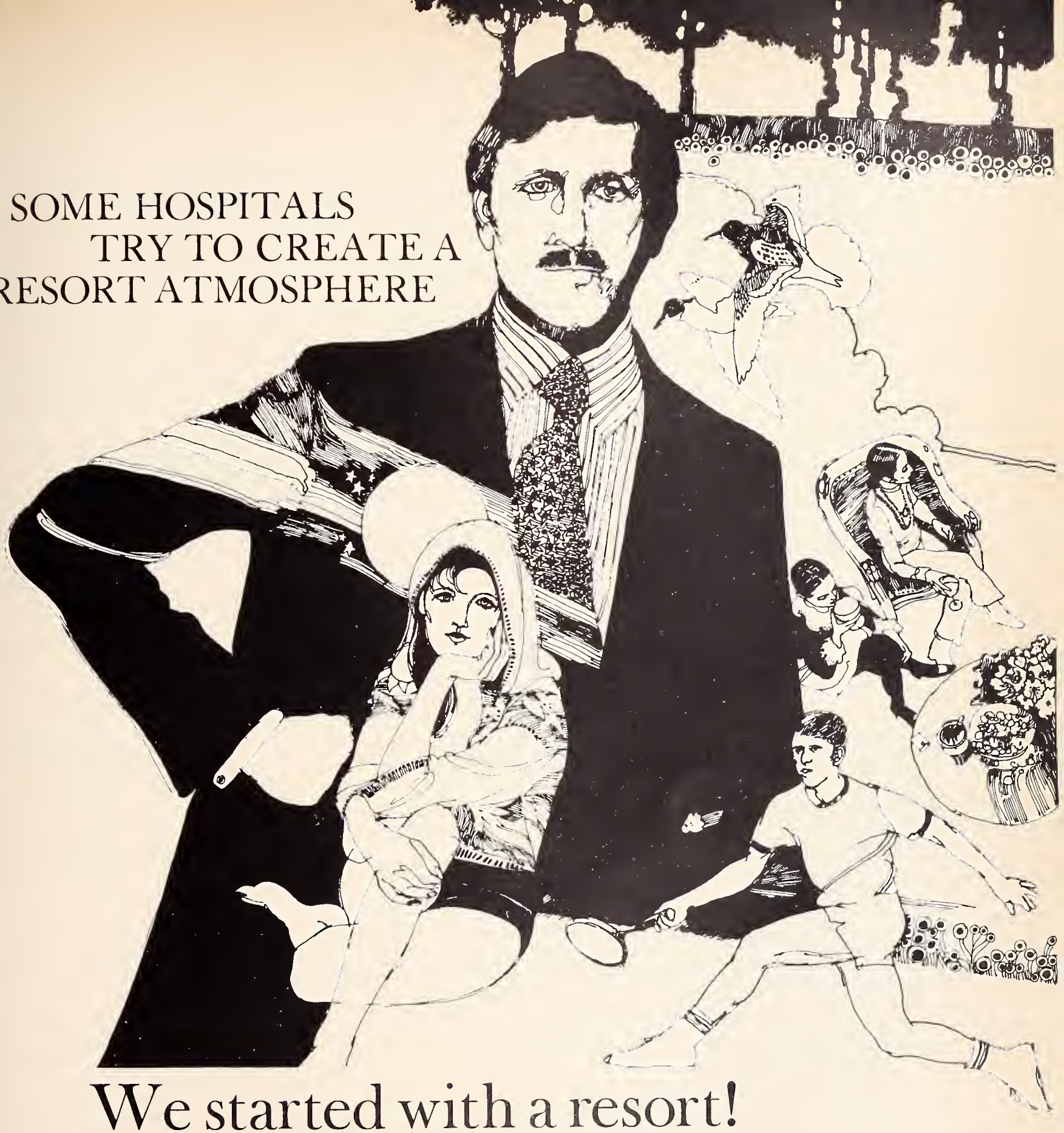
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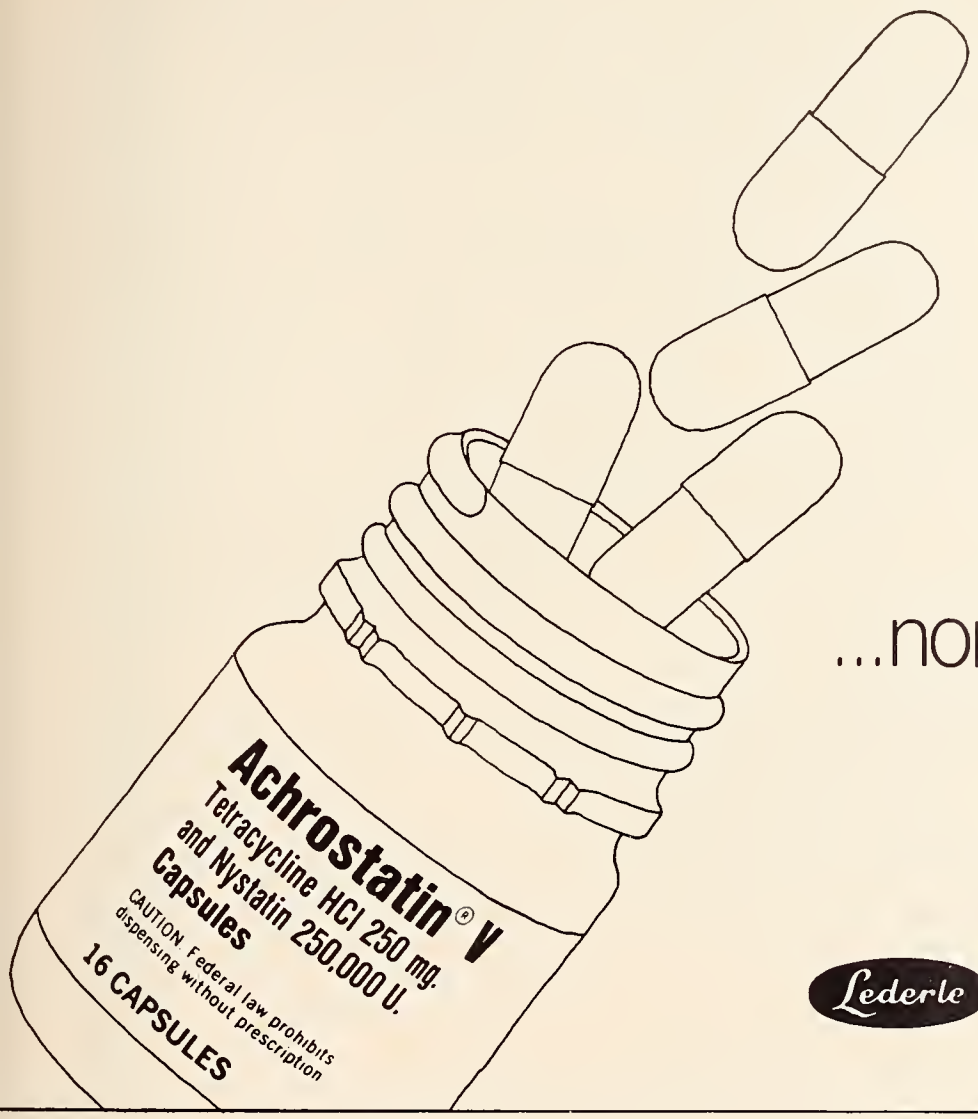
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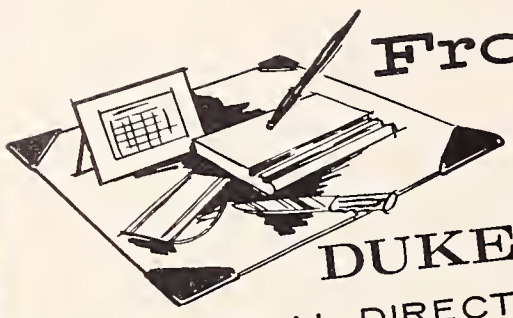
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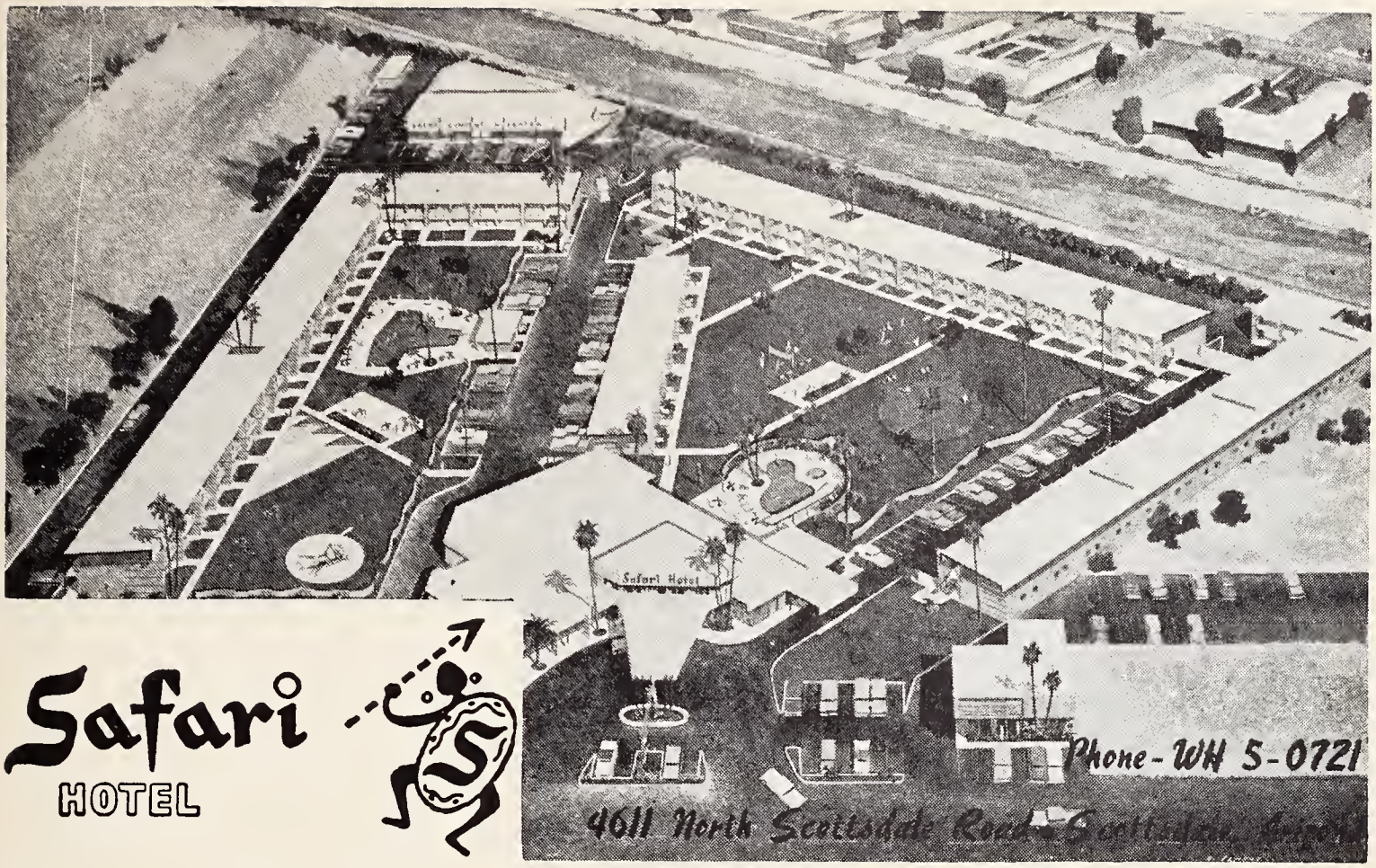
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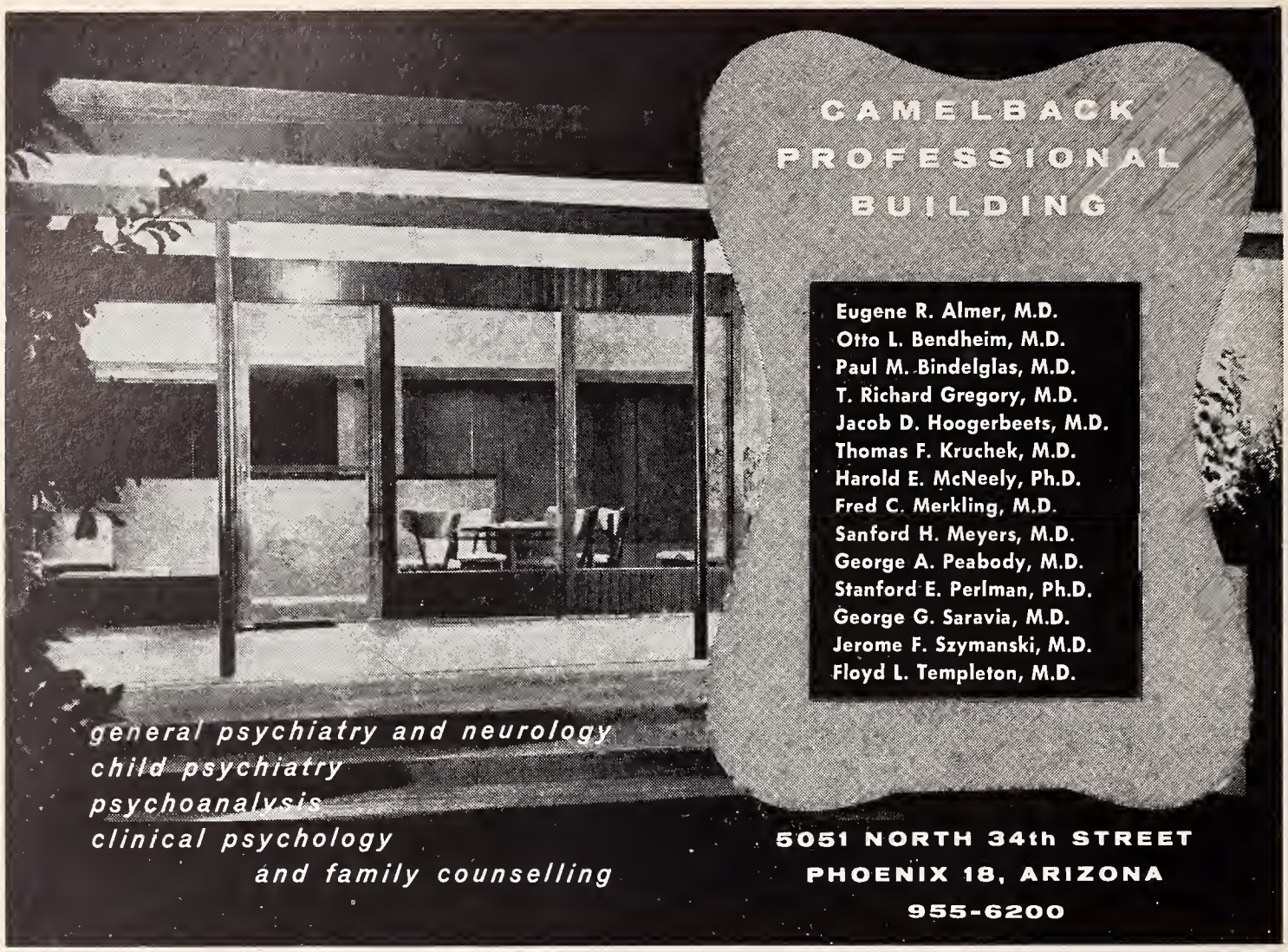
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His ulcer treatment is unique by tradition, too.

In the world of entertainment, a clown's makeup remains the exclusive property of its originator. Time has established that tradition. In the treatment of ulcers and other gastrointestinal complaints, time has established Pro-Banthine as a tradition too.

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Efudex®
(fluorouracil)
cream/solution

In the treatment of solar/actinic keratoses -
An alternative to cold, fire and steel

2/23/68
Before treatment with 5% 5-FU cream. Patient R. G., 78 years old, shows extensive skin changes due to weathering and severe solar/actinic keratoses.

3/26/68
Following one month of therapy. Intense erythematous reaction is seen at sites of keratoses. Normal skin has not reacted. Some areas which had reacted initially have undergone healing despite continued topical application of 5% 5-FU.

6/11/68
Ten weeks after discontinuance of therapy. All areas have healed completely. Residual mild erythema remains in some areas. This patient also had seborrheic keratoses which, as expected, have not reacted. There is no evidence of residual lesions or recurrences.



ROCHE
Roche Laboratories
Division of Hoffmann-La Roche Inc.
Nutley, N.J. 07110

An alternative to conventional therapy

Efudex (fluorouracil) offers the physician a topical alternative to cryosurgery, electrodesiccation and cold-knife surgery in the treatment of solar/actinic keratoses. It is effective, comparatively inexpensive and especially well suited for treatment of these multiple lesions. Important, too, is the highly desirable cosmetic result. Clinical experience demonstrates that treatment with Efudex results in an extremely low incidence of scarring.*

Highly effective

In clinical trials, depending on the dosage form and strength used, complete involution occurred in 77 to 88 per cent of lesions following treatment. The rate of recurrence was low, ranging from 1.7 to 5.6 per cent up to a year after completion of therapy. When new lesions appeared, repeated courses of Efudex therapy proved effective.*

Predictable therapeutic response

Two to four weeks constitutes a typical course of Efudex therapy. The response is usually characteristic and predictable. After three or four days of treatment, erythema begins to appear in the area of keratoses. This is followed by an intense inflammatory response, scaling and occasionally moderate tenderness or pain. The height of the inflammatory reaction generally occurs two weeks after the start of therapy, and then begins to subside as treatment is stopped. Within two weeks of discontinuing medication, the inflammation is usually gone. A mild erythema may remain for two or three months before gradually receding. Since this response is so predictable, lesions which do not respond should be biopsied.

Two strengths—two dosage forms

Efudex is available as a 2% or 5% solution or as a 5% cream. It is applied twice daily by the patient with a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, two important considerations: First, please consult the complete prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)-aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing-cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).



new
Efudex®
(fluorouracil)
cream/solution

*Data on file, Hoffmann - La Roche Inc., Nutley, New Jersey.

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MAY, 1971/VOL. 28, NO. 5

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Safety isn't everything in an antibiotic.

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Such as the time when tooth staining becomes a matter of consideration.

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Mild allergic reactions, abdominal discomfort and rare monilial overgrowth may occur. But serious reactions are extremely rare. And after 18 years, there are no known toxic effects on vital organs, bone, blood, nerves or teeth.

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(ERYTHROMYCIN, ABBOTT)

Brief Summary

Indications

Erythrocin is indicated against gram-positive cocci — staphylococci (most strains), pneumococci and streptococci (including enterococci). Active against other pathogens, such as *Corynebacterium, Hemophilus, Clostridium, Neisseria,* and *Treponema pallidum,* the agents causing trachoma and lymphogranuloma venereum and primary atypical pneumonia caused by *Mycoplasma pneumoniae* (Eaton agent). Establish susceptibility of pathogenic organism when practical. Maintain therapeutic levels for ten days in the treatment of streptococcal infections to help prevent rheumatic fever and glomerulonephritis. Also consider local measures or surgery whenever indicated.

Contraindications

Known hypersensitivity to erythromycin. I.M. preparation also contraindicated in patients hypersensitive to the "caine" type of local anesthetics.

Precautions, Side Effects

Occasionally abdominal discomfort, cramping, nausea or vomiting may occur; generally controlled by reduction of dosage. Mild allergic reactions, such as urticaria and other skin rashes, may occur. Serious allergic reactions have been extremely infrequent; if hypersensitivity is encountered consider appropriate countermeasures, e. g., epinephrine, steroids, etc., and withdraw drug. The rare possibility of overgrowth of nonsusceptible organisms should be kept in mind; if it occurs withdraw drug and institute appropriate treatment. Local venous discomfort, generally mild, may occur with I. V. administration. I.M. preparation is suitable for deep intramuscular administration only; restrict use in children with small muscle mass. A mild transient local discomfort sometimes occurs following rectal insertion of Erythrocin Suppositories; discontinue if significant discomfort persists.

Administration and Dosage

I. ORAL: In adults with mild to moderate infections caused by readily-susceptible organisms 1.0 Gm. daily; more severe infections or those caused by less susceptible organisms 2.0 Grams daily; unusually severe infections up to 4 or more Gm./day. Daily dose in children is 15 to 25 mg./lb./day depending upon severity of infection. Daily dose should be administered in divided doses at 4-to-6 hour intervals. Continue treatment for at least 48 hours after symptoms have subsided and temperature has returned to normal. In fulminating or life-threatening infections, a parenteral form of erythromycin is preferred.

II. PARENTERAL: Intravenous administration may be continuous or intermittent (6 to 8 hour intervals); 1 to 4 Gm. daily in adults; 15 to 25 mg./lb./day in children, depending upon severity of infection. Recommended I.M. dose is 100 mg. (2 ml.) for adults, 50 mg. (1 ml.) for children 30 lbs. or more and 1.4 to 1.8 mg./lb. in smaller children. Injections are usually given at 6 to 8 hour intervals; may be given at 4 to 6 hour intervals for severe infections.

III. RECTAL: Following therapeutic doses are recommended in children: to 20 lbs., 1-125 mg. suppository every 8 hours; 20 to 40 lbs., 1-125 mg. suppository every 6 hours.

Change to oral therapy as soon as practicable.

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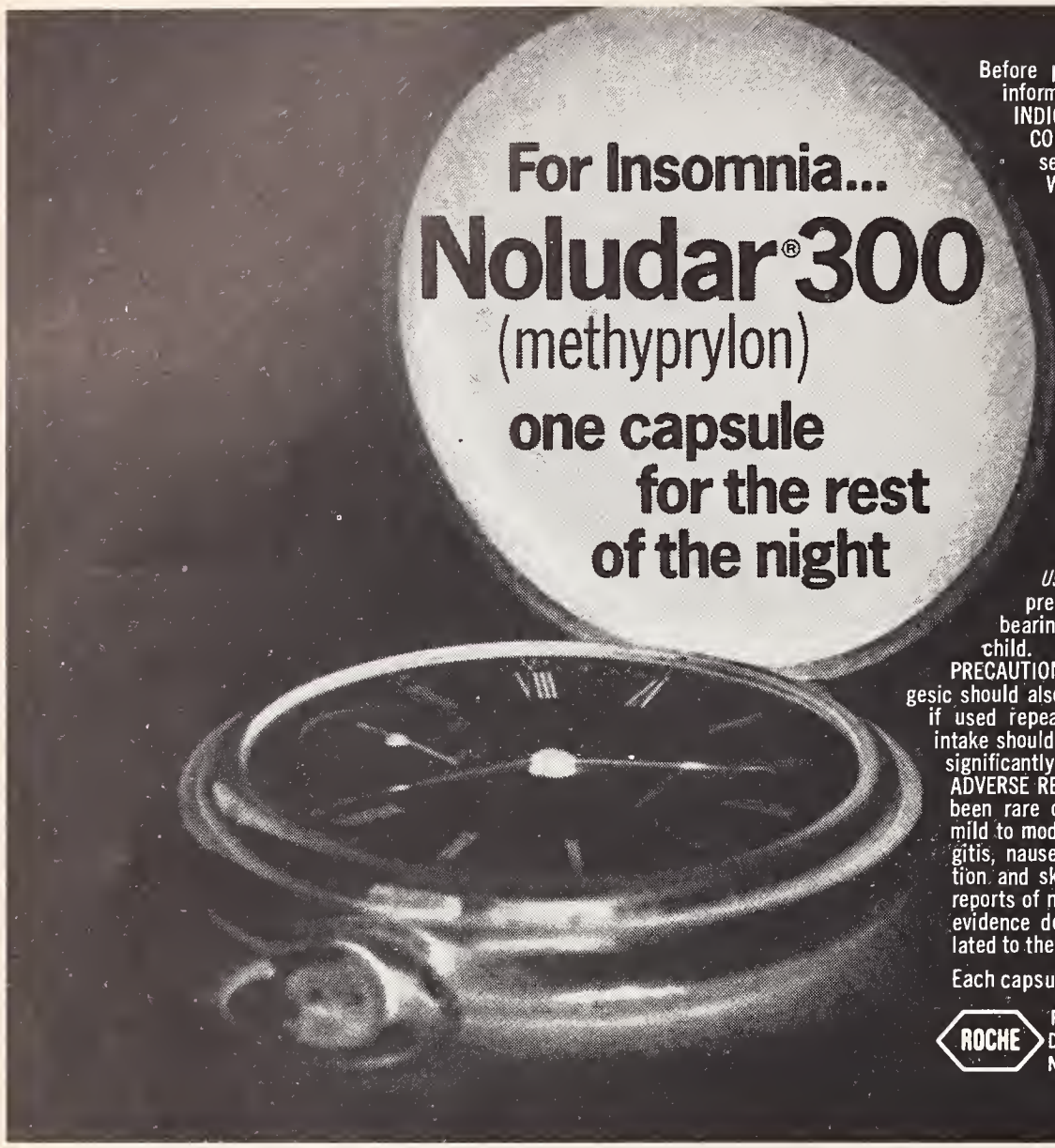
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a division of SAMARITAN HEALTH SERVICE

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Before prescribing, please consult complete product information, a summary of which follows:

INDICATION: Relief of insomnia of varied etiology.

CONTRAINDICATIONS: Patients with known hypersensitivity to the drug.

WARNINGS: Caution patients about combined effects with alcohol and other CNS depressants. Caution against hazardous occupations requiring complete mental alertness, such as operating machinery or driving a motor vehicle shortly after ingesting the drug.

Physical and Psychological Dependence: Physical and psychological dependence rarely reported. If withdrawal symptoms do occur they may resemble those associated with withdrawal of barbiturates and should be treated in the same fashion. Use caution in administering to individuals known to be addiction-prone or those whose history suggests they may increase the dosage on their own initiative. Repeat prescriptions should be under adequate medical supervision.

Usage in Pregnancy: Weigh potential benefits in pregnancy, during lactation, or in women of childbearing age against possible hazards to mother and child.

PRECAUTIONS: If sleeplessness is pain-related, an analgesic should also be prescribed. Perform periodic blood counts if used repeatedly or over prolonged periods. Total daily intake should not exceed 400 mg, as greater amounts do not significantly increase hypnotic benefits.

ADVERSE REACTIONS: At recommended dosages, there have been rare occurrences of morning drowsiness, dizziness, mild to moderate gastric upset (including diarrhea, esophagitis, nausea and vomiting), headache, paradoxical excitation and skin rash. There have been a very few isolated reports of neutropenia and thrombocytopenia; however, the evidence does not establish that these reactions are related to the drug.

Each capsule contains 300 mg of methyprylon.

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374-1

when an unnerving experience compounds the pain



the compound analgesic that calms instead of caffeinates

In addition to pain, this patient has experienced anxiety, fear, embarrassment, and frustration. No doubt these psychic factors actually increased her perception of pain. Surely the last thing she needs is an analgesic containing caffeine. The logical choice is Phenaphen with Codeine. It provides a quarter grain of phenobarbital to take the nervous "edge" off, so the rest of the formula can control the pain more effectively. It's no accident that the Phenaphen formulations contain a sedative rather than a stimulant. Don't you agree, Doctor, that psychic overlay is an important factor in most of the accident cases you see?

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with Codeine

Phenaphen with Codeine Nos. 2, 3, or 4 contains: Phenobarbital (¼ gr.), 16.2 mg. (warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Hyoseyamine sulfate, 0.031 mg.; Codeine phosphate, ¼ gr. (No. 2), ½ gr. (No. 3), or 1 gr. (No. 4) (warning: may be habit forming). **Indications:** Provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products, excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** Phenaphen No. 2 and No. 3—1 or 2 capsules every 3 to 4 hours as needed; Phenaphen No. 4—1 capsule every 3 to 4 hours as needed. For further details see product literature.
A. H. Robins Company, Richmond, Va.

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'head clear upon arising'

For upper respiratory allergies and infections including the common cold, Dimetapp Extentabs® effectively relieve the stuffiness, drip and congestion all night and all day long on just one Extentab every 12 hours. For most patients drowsiness or overstimulation is unlikely.

prescribing information appears on next page

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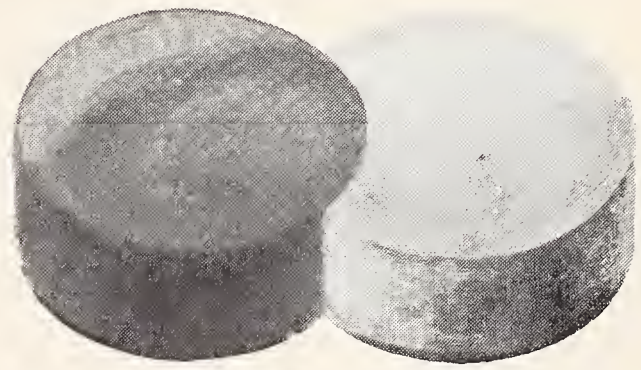
Dimetapp® Extentabs

Dimetane® (brompheniramine maleate), 12 mg., phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.

Dimetapp Extentabs®

INDICATIONS: Dimetapp Extentabs are indicated for symptomatic relief of allergic manifestations of upper respiratory illnesses, such as the common cold, seasonal allergies, sinusitis, rhinitis, conjunctivitis and otitis. In these cases it quickly reduces inflammatory edema, nasal congestion and excessive upper respiratory secretions, thereby affording relief from nasal stuffiness and postnasal drip.
CONTRAINDICATIONS: Hypersensitivity to antihistamines of the same chemical class. Dimetapp Extentabs are contraindicated during pregnancy and in children under 12 years of age. Because of its drying and thickening effect on the lower respiratory secretions, Dimetapp is not recommended in the treatment of bronchial asthma. Also, Dimetapp Extentabs are contraindicated in concurrent MAO inhibitor therapy.
WARNINGS: *Use in children:* In infants and children particularly, antihistamines in overdosage may produce convulsions and death.
PRECAUTIONS: Administer with care to patients with cardiac or peripheral vascular diseases or hypertension. Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness such as driving an automobile, operating machinery, etc. Patients receiving antihistamines should be warned against possible additive effects with CNS depressants such as alcohol, hypnotics, sedatives, tranquilizers, etc.
ADVERSE REACTIONS: Adverse reactions to Dimetapp Extentabs may include hypersensitivity reactions such as rash, urticaria, leukopenia, agranulocytosis and thrombocytopenia; drowsiness, lassitude, giddiness, dryness of the mucous membranes, tightness of the chest, thickening of bronchial secretions, urinary frequency and dysuria, palpitation, hypotension/hypertension, headache, faintness, dizziness, tinnitus, incoordination, visual disturbances, mydriasis, CNS-depressant and (less often) stimulant effect, anorexia, nausea, vomiting, diarrhea, constipation, and epigastric distress.
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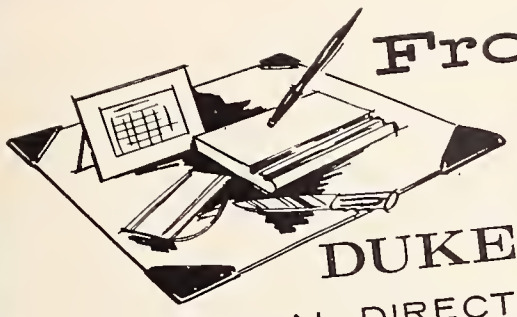
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A patient with a moderate blood pressure elevation may require no medication and be under good control.

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That's 50% more than our premiums are geared for, and requires an extra premium charge.

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Thanks,

Duke

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IF MORE MEN CRIED



At least seventy-five out of one hundred adults with duodenal ulcers are men.[1] Why? It may be significant that duodenal ulcer patients tend to crave recognition and are "especially vulnerable to threats to their manly assertive independence."[2]

Hypersecretion—an atavistic response. Stewart Wolf, who, with Harold G. Wolff, studied the personalities of duodenal ulcer patients, wonders if masculine competitiveness is related to "an atavistic urge to devour an adversary." It is striking, he reports, that an accentuation of gastric acid secretion and motility can be "induced in ulcer patients by discussions that arouse feelings of inadequacy, frustration and resentment."[2]

By chance? A lean, hungry lot. Was the link between emotions and gastric hyperacidity acquired through mutation to serve a purpose? During man's jungle period of evolution, the investigator points out, a male dealt with a foe by killing and devouring it. "It may be more than coincidence," he concludes, that peptic ulcer patients appear to be "a lean, hungry, competitive lot."[3]

Big boys don't cry. If more men cri
maybe fewer would wind up with duode
ulcers. But men will be men—the sum tota
their genes and what th
are taught. Schottsta
observes that whe
mother admonishes l
son who has hurt hims
that big boys don't cry,
is teaching h
stoicism.[4] Crying is
negation of everyth
society thinks of as mar
A boy starts defending
manhood at an early a

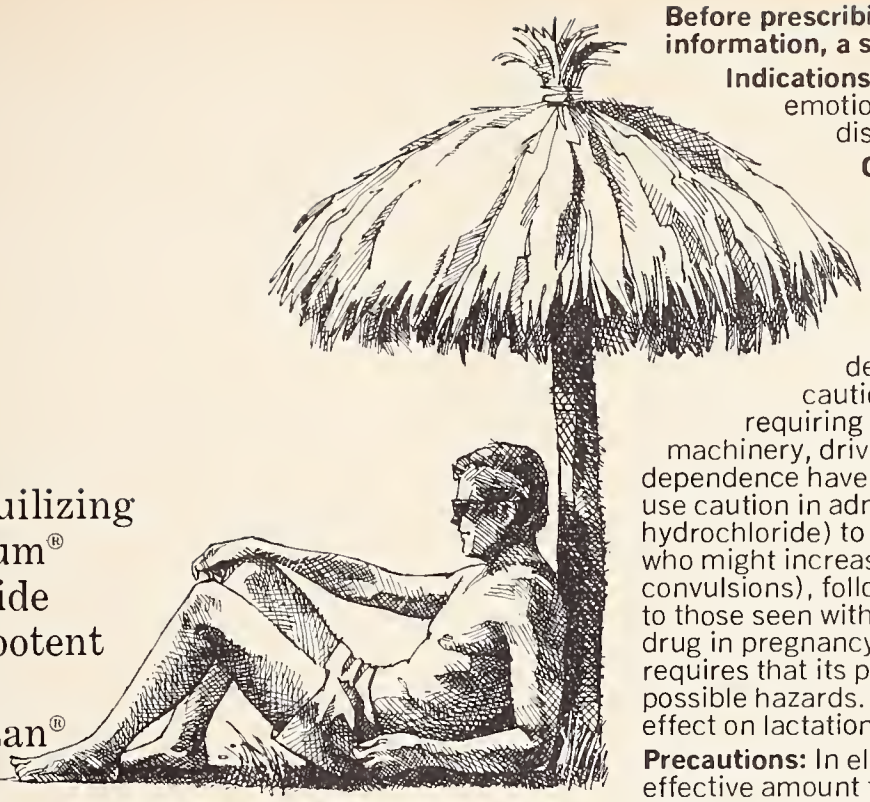


**Take away stre
you can take away sympto**

There is no question that stress play
role in the etiology of duodenal ulc
Alvarez[5] observes that many a man with
ulcer loses his symptoms the day he shuts
the office and starts out on a vacation. T
problem is, the type of man likely to have
ulcer is the type least likely to take l
vacations or take it easy at work.

**The rest cure vs. the two-way action
Librax.®** For most patients, the rest cur
as unrealistic as it is desirable. Still,
stress factor must be dealt with. And h
is where the dual action of adjunctive Lib
can help. Librax is the only drug that c

References: 1. Silen, W.: "Peptic Ulcer," in Wintrobe, M
et al. (eds.): *Harrison's Principles of Internal Medicine*
6, New York, McGraw-Hill Book Company, 1970, p.
2. Wolf, S., and Goodell, H. (eds.): *Harold G. W*
Stress and Disease, ed. 2, Springfield, Ill., Charle
Thomas, 1968, pp. 68-69. 3. *Ibid.*, p. 257. 4. Schottst
W. W.: *Psychophysiologic Approach in Medical Prac*
Chicago, Ill., The Year Book Publishers, Inc., 1960, p.
5. Alvarez, W. C.: *The Neuroses*, Philadelphia, Pa., W
Saunders Company, 1951, p. 384.



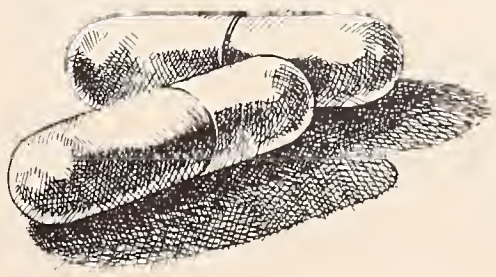
nes the tranquilizing
tion of Librium®
hlordiazepoxide
Cl) with the potent
nticholinergic
tion of Quarzan®
lidinium Br).

Protects man from his own hungry personality. The action of Librium reduces xiety—helps protect the vulnerable patient om the psychological overreaction to stress at clutches his stomach. At the same time, e action of Quarzan helps quiet the hyperitive gut, decreasing hypermotility and persecretion.

An inner healing environment with 1 2 capsules, 3 or 4 times daily. Of course, ere's more to the treatment of duodenal cer than a prescription for Librax. The paent—with your guidance—will have to adst to a different pattern of living if treatent is to succeed. During this adjustment riod, 1 or 2 capsules of Librax 3 or 4 times ily can help establish a desirable environent for healing.

Librax: It can't change man's nature. It it can usually make it easier for men to pe with the discomfort of stress—both sychic and gastric—that can precipitate d exacerbate duodenal ulcer.

Librax: Rx #60 1 cap. *a.c.* and 2 *h.s.*



Before prescribing, please consult complete product information, a summary of which follows:

Indications: Indicated as adjunctive therapy to control emotional and somatic factors in gastrointestinal disorders.

Contraindications: Patients with glaucoma; prostatic hypertrophy and benign bladder neck obstruction; known hypersensitivity to chlordiazepoxide hydrochloride and/or clidinium bromide.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering Librium (chlordiazepoxide hydrochloride) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards. As with all anticholinergic drugs, an inhibiting effect on lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude development of ataxia, oversedation or confusion (not more than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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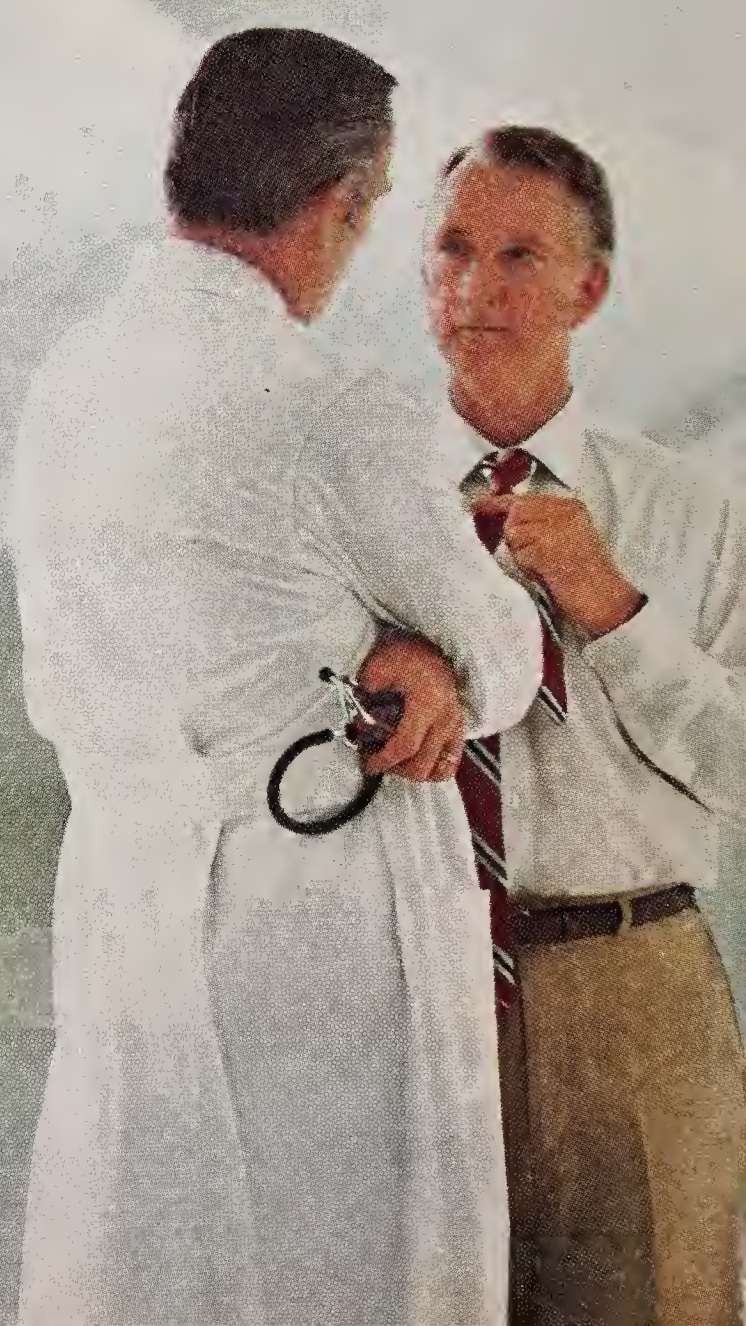
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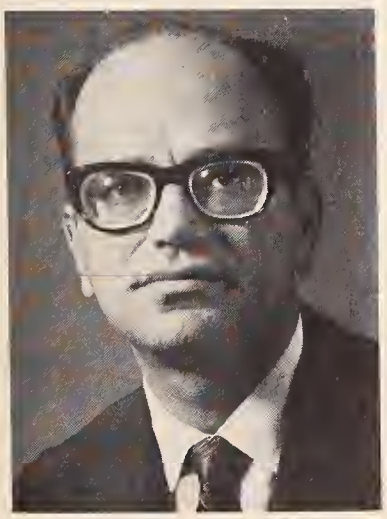
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Original Articles

SURGICAL TREATMENT OF CORONARY ARTERY DISEASE

Introduction

Coronary artery disease is a leading cause of death and disability, and it constitutes an immense health problem.[47] It often takes its toll in the best and most productive years of life; and as Beck[5] has said, it is so often the story of "hearts too good to die."

Interest in the surgical treatment of coronary artery disease has waxed and waned over a period of 50 years. In the past 20 years, and most particularly in the past 3 to 5 years, interest has noticeably quickened. Cardiac catheterization and coronary arteriography allow precise diagnosis. Surgical solutions are available. Surgical procedures are becoming increasingly refined and effective. The early results are extremely promising.

It is the purpose of this paper to review the subject of surgery for coronary artery disease, and to report a small clinical experience.

Revascularization of the Heart: Rationale and Surgical Methods

The rationale of all surgical procedures is to bring a new blood supply to the heart and better distribute the blood supply to the entire amyocardium.

The currently available surgical procedures can be described as either direct procedures on the coronary vessels themselves, or indirect procedures which include myocardial implant, poudrage, and cardiopexy.

Indirect Surgical Procedures

The Vineberg procedure consists of implantation of the internal mammary artery into myocardial tunnel. It may also include poudrage, epicardiectomy, and free omental graft. The procedure has been described in detail by Vineberg,[66, 67] Effler et al,[18] Favaloro et al,[22] and Sewell.[54] The essential features of the procedure are illustrated in Fig. 1. It currently has wide usage. The indications for the singular use of the Vineberg procedure are diminishing. It remains a useful procedure combined with coronary bypass grafts, and also in situations where bypass grafts are not feasible.

Variations of the Vineberg concept include the implantation in the myocardial tunnel of splenic artery,[8] arterialized saphenous vein grafts[15, 25] and intercostal vessels.[44] None of these procedures has gained wide acceptance.

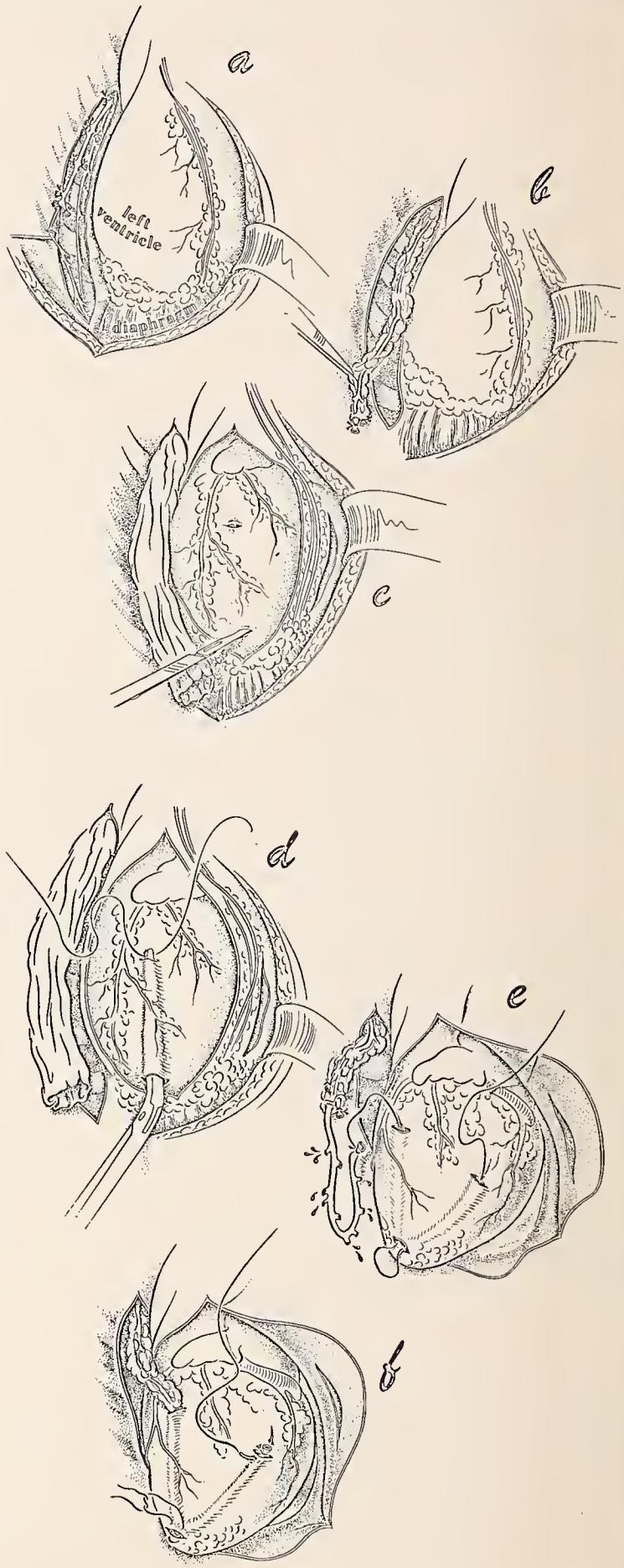


Figure 1

Vineberg procedure: Internal mammary artery implant. An indirect method.

A and b show the mammary artery dissection.

C shows stab wounds through epicardium, lateral to anterior descending artery, to facilitate creation of the intramyocardial tunnel. Notice that the tunnel will pass under a sizable branch of the anterior descending artery.

D, e and f illustrate bringing the implant through the tunnel.

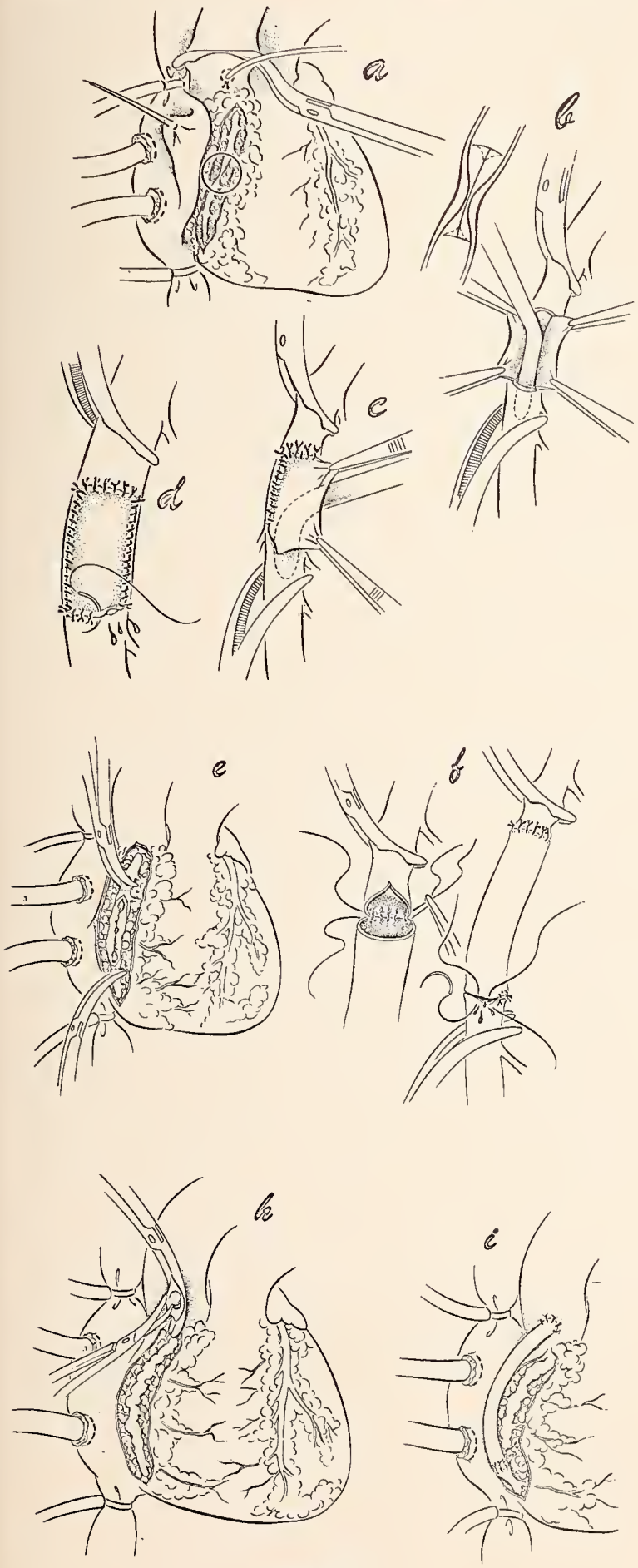


Figure 2
Direct method

A, b, c, and d depict the utilization of coronary arteriotomy and patch graft reconstruction.
. .E, f, and g show the "in line" resection of a segment of the right coronary and reconstruction with saphenous vein autograph.
H and i illustrate on aortico-coronary bypass graft. The distal anastomosis to the coronary is shown end-to-end, but is more commonly employed end-to-side.

Direct Surgical Procedures

Endarterectomy[3, 11, 16] implies the removal of atheromatous material from either coronary. Carbo-dissection or gas endarterectomy, a technique which facilitates the surgical procedure, has been more recently advocated by Sawyer.[50] Endarterectomy has never gained wide acceptance primarily because of case fatality and reocclusion.[11, 16, 17, 21]

Endarterotomy and patch graft repair has been used extensively by Effler,[17, 19] and is illustrated in Fig. 2. It is a valuable method, but now used with decreasing frequency because of the innovation of bypass grafts to be described. Furthermore, there has been noted a rather high incidence of reocclusion or severe stenosis.[55]

Coronary artery bypass graft, utilizing saphenous vein, is currently the most widely used of the direct procedures and has the virtues of simplicity, versatility, and a high success rate.[23, 24, 32, 33, 40,56,63] The same principle is involved in the case of internal mammary artery to coronary artery bypass as advocated by Green[28, 29, 60] Fig. 3.

Direct procedures were originally applied to

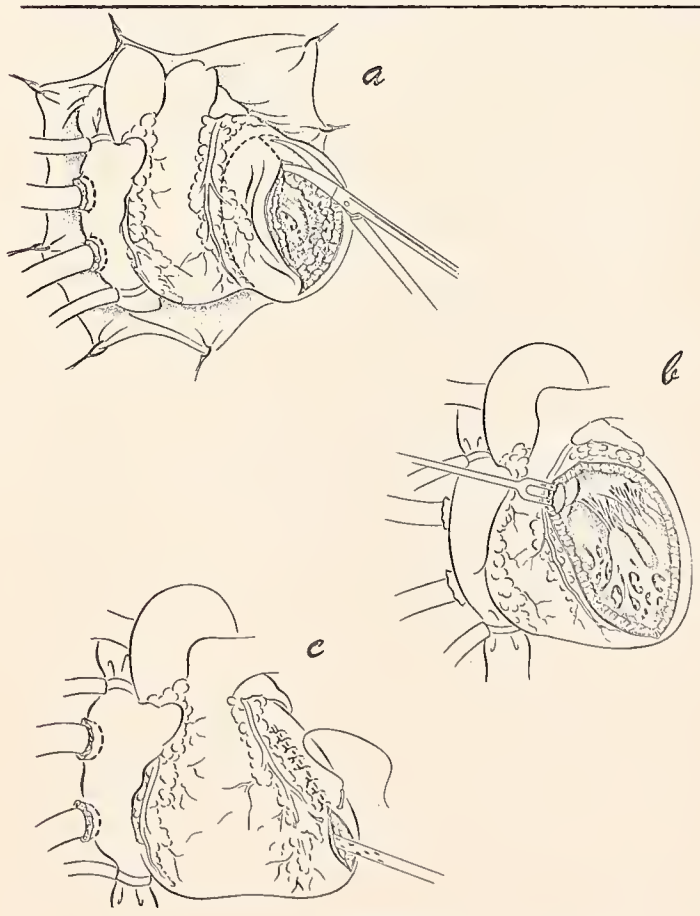


Figure 3
Resection of Ventricular Anerurysm

A, b, and c show the technics employed in resection of the aneurysm. Care is taken to preserve the integrity of the papillary muscles. Mitral valve replacement can be done either through the ventricle or atrium if mitral insufficiency exists and its correction is required.

the major coronary vessels, particularly the right coronary. More recently, as a result of the experience of Johnson et al,[32] Favaloro et al,[23, 24, 56] and Green et al,[28, 29] the small size coronary vessels, 1 to 3 mm. in size, have been utilized in bypass procedures with very good success. Johnson[32] has stressed the combined surgical approach utilizing direct and indirect procedures as required for the best total revascularization possible.

Surgical Procedures Allied To Revascularization

The complications of myocardial infarction include dyskinetic myocardium, ventricular aneurysm, papillary muscle dysfunction with secondary mitral insufficiency, and ventricular septal defect secondary to rupture of the ventricular septum. Resection of acutely infarcted myocardium ("infarctectomy") has been reported by Heimbecker,[31] and others.[35, 59] Closure of ventricular septal defect has been successfully done.[12] Resection of ventricular aneurysms,[2] and mitral valvuloplasty or replacement for papillary muscle dysfunction are well recognized procedures. Fig. 4.

Acupuncture, described by Sen[52] and considered by others,[15, 46, 69] consists of the creation of miniature ventricular tunnels by punching through the wall of the myocardium. The rationale advanced is the creation of left ventricular to intramyocardial shunts, thereby directly arterializing the myocardium. The procedure is highly controversial.

Braunwald et al[10] have described pacing of the carotid body as symptomatic treatment of angina. The purpose of the procedure is to reduce heart rate, decrease intraventricular tension, and decrease the ionotrophic status of the myocardium. By decreasing the demand for blood, angina allegedly improves. The procedure has questionable value, and more definitive procedures seen appropriate.

Historical Perspectives

Beck described cardiopexy, poudrage, and arterialization of the coronary sinus.[4, 5, 6] His early efforts to devise and perfect surgical methods for the treatment of coronary artery disease are very notable. His was a lonely voice which rankled many: "Nowhere in medicine is there such intellectual emptiness as exists in the understanding and treatment of this disease."[5]

Gordon Murray, much ahead of his time, described the experimental resection of infarcted myocardium, internal mammary artery to coronary artery bypass grafts, and vein bypass grafts.[41, 42, 43]

Vineberg[65] described internal mammary artery implants in 1946, and later reviewed the rationale of this procedure.[66] Effler[18] deserves credit for the wide application of the method, and he is its leading advocate in this country. The experimental work of Sabiston et al[48, 49] is of interest, with respect to the behavior of different vessels and prostheses as myocardial implants.

Mason Sones[59] is responsible for the wide application of coronary arteriography and the precise definition of disease patterns. This innovation is very much responsible for the rapid and meaningful strides which followed. As Effler says, it is axiomatic in medicine that diagnosis precedes treatment.[21] Thus, the evaluation of earlier surgical efforts was virtually impossible. Clinical and electrocardiographic evaluation has proved to be falacious in so many respects. Indeed, the absence of positive proof of betterment following earlier surgical efforts gave good cause for skepticism, some just and some unjust.

Senning[53] first described "strip" grafting or patch grafts of the coronaries, which was subsequently advocated and widely utilized by Effler.[17, 19]

Endarterectomy was originally reported by Bailey[3] and later by Longmire, Cannon et al.[36]

Coronary bypass grafts utilizing autogenous vein have been reported by Johnson et al[32] and Favaloro et al.[23, 24] The earlier experimental work by Gordon Murray[42] and Absalon et al[1] is notable. Green et al[28, 29] first applied internal mammary artery to coronary artery bypass clinically.

The papers of Van Sant,[64] Hattler and Sabiston[30] and the monograph of Mead[37] should be consulted for detailed historical information. The use of cervicodorsal sympathectomy as employed by White,[68] total thyroidectomy, internal mammary artery ligation as advocated by Glover et al[26] are there described.

Pathology

The paper of Blumgart et al,[9] Schlesinger and Zoll,[51] Szilagyi et al[61] and Miale et al[39] all described the frequent involvement of main stem right and left coronary arteries, the anterior descending and the circumflex. Frequently there was diffuse disease. Also noted, sometimes parenthetically, was the frequent absence of disease in the small coronary vessels, that is the 1 to

3 mm. size vessels. The latter fact has particular importance in the present surgical concept utilizing the small coronary vessels as the end points of bypass grafts.

Diagnosis

"The surgery of coronary artery disease begins and ends with coronary arteriography," as Effler[21] puts it, and another way of emphasizing the contributions of Mason Sones.[59] The necessary diagnostic requirements are: 1. Precise anatomy and pathology of the coronary vessels, and the demonstration of perfusion deficits. 2. An assessment of ventricular dynamics, and the presence and localization of dyskinetic ventricle, aneurysm formation, etc. 3. The demonstration of associated valvular lesions such as mitral insufficiency related to papillary muscle dysfunction and co-existent calcific aortic stenosis. Complete right and left cardiac catheterization and coronary arteriography answer to the diagnostic needs.

Indications For Surgery

An indication for surgery exists when there is a demonstrable and significant perfusion deficit as demonstrated by complete diagnostic evaluation and correlated with clinical evidence of disability in the form of angina, past or recurrent myocardial infarction, and evidence of "power failure" of the ventricle.

Taylor and Gorlin[62] have emphasized the objective criteria with reference to internal mammary artery implantation. Their reasoning emphasizes the importance of perfusion deficit as indicated by a high degree of stenosis, abnormalities of lactic acid metabolism, and abnormalities of radioactive chromium studies of coronary flow.

Johnson et al[32] have stated no patient has been refused surgery in their experience with more than 300 patients. This indicates how rapidly the indications for surgery have been broadened to include many poor risk patients with a multitude of problems. One can contrast the present indications for surgery as suggested by Johnson and others with earlier recommendations for restricted surgical treatment.[18, 27] To quote Johnson:[32] "We have not accepted these factors, and instead have worked on the simple hypothesis that the ischemic human heart must inevitably work better if new blood is provided and all areas of solid scar, or aneurysms, are removed."

Results of Surgery

There are few long-term or well-controlled results of surgery of coronary artery disease. The report of Dietrich et al[14] which involved some 511 patients comes as close to a controlled study as is now available. That study indicates that patients treated by the Vineberg procedure have fared somewhat better than untreated controls.

Favaloro, and Effler et al[22] report some 249 patients who underwent the Vineberg proeedure. Sixteen (6.4%) died in the hospital, 12 died at home (4.8%) and 10 were lost to follow-up. Of 211 patients followed, 62.5% had good or excellent results, and 15.6% had fair results. Thus, 78.1% were improved. The remaining 21.8% had unsatisfactory results. An excellent result is defined as no angina and full time work. A good result is full time work and occasional angina. Similar results are reported by Vineberg,[66, 67] Bigelow,[7] Effler[18] and Gorlin and Taylor.[27]

Sheldon, Favaloro and Effler et al[55] report 281 patients who had 288 direct coronary artery reconstruction procedures. Hospital mortality was 12.5%. Of 260 procedures performed on the right coronary system; there was an 8.1% hospital mortality. The majority of the survivors were significantly improved. Of 139 patients studied postoperatively, 66.3% had patent reconstruction.

The results of Johnson et al[32] are notable and involve something over 300 patients who had a variety of operative procedures. Of the patients who had Vineberg operations, 75% were improved at 3 months, 95% at 6 months. Of 122 patients who had direct coronary artery reconstruction, the surgical mortality was 15%, but ranged as high as 44% in patients with triple vessel disease and ventricular aneurysm. Of 301 patients with indirect and direct surgery, there was a total of 12% mortality. Six died within 2 months and 2 between 2 to 6 months, most of whom had Vineberg procedures. Only 6 of the survivors were not improved (all with Vineberg procedures). Of patients with direct procedures, the majority were angina free and failure controlled. Of 61 vein grafts involving the left coronary system, 47 had postoperative arteriography and 44 were patent. Of 72 right coronary grafts, 58 were re-studied, and 52 were open. Thus, more than 90% of the patients had patent and functioning grafts. Note should be taken of the relatively short follow-up of many patients.

Green et al[29] indicated similar good results with internal mammary artery to coronary bypass procedures.

Thus, the operative mortality seems reasonable and the results are good. Both clinical and angiographic evidence indicates revascularization procedures do truly revascularize the myocardium in both the anatomic and physiologic sense. McNally and Benchimol[38] have shown that ischemic changes, recorded electrocardiographically, occur with contrast injection of a patent implanted internal mammary artery. There is further demonstrated a close correlation between clinical improvement and the objective evidence of successful revascularization.[22, 32, 55, 56, 62]

Controversies

Kirklin[34] and Shumway[58] have raised the question whether the myocardium is truly revascularized and whether arteriographic and metabolic flow studies can be equated with true physiologic revascularization. Shumway[58] states, "The nagging suspicion persists that the Vineberg procedure is kin to internal mammary artery ligation 10 years ago." The report of Takaro et al,[13] supports a certain skepticism. Some 13 patients underwent thoracic sympathectomy for persistent anginal pain following the Vineberg procedure. Flow studies indicated the average flow in the pedicle was 8 cc per minute and all were patent angiographically immediately prior to flow determinations.

The brisk and sometimes colorful editorial comments of Zimmerman[70, 71] and Effler[20] further define the controversy. As noted, reference is made primarily to the Vineberg procedure, but obvious bearing on all surgical procedures including direct revascularization is implied.

There is as yet little conclusive evidence that revascularization procedures prevent myocardial infarction, prolong life, or alter the natural life history of coronary artery disease. However, there is good and substantial reason to believe that the early promising results of surgical treatment will be reflected in a substantially improved outlook in surgically treated patients.

Case Reports

Thirty-six operative procedures have been performed upon 34 patients. Twenty-six Vineberg procedures and 10 coronary artery bypass grafts characterize the operations. Two of the 10 patients who underwent coronary artery bypass procedures had previous Vineberg operations. The first Vineberg procedure was performed March 28, 1967, and the first coronary artery bypass procedure November 25, 1969. This small group of patients represents a preliminary experience with operative procedures for coronary artery disease at the Good Samaritan Hospital, Phoenix, Arizona.

The following data has been compiled, and in every instance refers to operations performed (36 operations in 34 patients).

Age:		Sex:	
20 - 29	1	Male	34
30 - 39	3	Female	2
40 - 49	10		
50 - 59	18		
60 - 69	3		
70+	1		

Preoperative Clinical Data:

Previous myocardial infarction	24
Severe disability	27
Previous operations for coronary artery disease	3

Electrocardiogram:

Old infarct	26
Ischemia	33
Normal	3
Ventricular arrhythmia	8

Extent of disease and associated lesions:

Single vessel	1
Double vessel	11
Triple vessel	24
Ventricular aneurysm	1
Dyskinetic ventricle	2
Mitral insufficiency	3

Indications for surgery:

Disabling angina, previous or recurrent myocardial infarction, and the extent of disease as demonstrated by arteriography, either alone or in combination, constituted the indication for surgery in all of the patients.

Operative procedures:

a. Vineberg procedure 26

All had double implants, 18 had omental grafts, and there were no other procedures.

b. Coronary artery bypass grafts 10

This procedure was combined with a left-sided Vineberg in all but one patient. Reversed saphenous vein was used in all, and cold arrest utilized during the operative procedure. No other procedures were combined with the bypass graft.

Deaths within 30 days of surgery:

There were 3 deaths. Two occurred following coronary artery bypass graft, and one during the course of a Vineberg proce-

dure. The patient who died as a result of the Vineberg procedure had left ventricular failure during the operative procedure and was unable to maintain an adequate cardiac output.

The 2 patients who died following coronary artery bypass procedures both died as a result of acute ventricular arrhythmia, one of whom also developed left ventricular failure.

Complications:

Bleeding	2
Left ventricular failure	3
Intra-operative myocardial infarction	1
Hepatitis	1
Postcardiotomy syndrome	3

Late deaths:

One occurred at 2 months; 2 at 5 months; 1 at 12 months, and the time of death was unknown in 1. All of these patients died suddenly, presumably as a result of ventricular arrhythmias.

Present clinical status of survivors:

There are 20 survivors of the 26 patients who underwent the Vineberg procedure.

Angina (but much improved)	8
No angina	3
Poor result	5
Unknown result	3
Equivocal result	1

Two of the patients classified as having a poor result have already undergone coronary artery bypass grafts. Two additional patients classified as having poor result are scheduled for coronary artery bypass procedures.

Of the 10 patients who underwent coronary artery bypass grafts, there are 8 survivors. It is too soon to give a meaningful appraisal of their status. None have angina, all feel they are much improved, and there have been no late complications to date.

Postoperative catheterization:

Six patients who have had Vineberg operations have undergone cardiac catheterization. Of these, 4 had open internal mammary vessels whereas two were closed.

Only 2 patients who had coronary artery bypass grafts have undergone postoperative catheterization. Of these, 1 is open and 1 is closed.

Comment

The operative mortality is similar to that stated by others. There was an 8.3% operative mortality in the 36 operations; on the other hand, 20% of the patients who underwent coronary artery bypass grafts died.

It is notable that of the 2 patients who have undergone re-operation following Vineberg procedures, and the 2 patients in whom coronary artery bypass graft is anticipated following the Vineberg procedure, all had initial good results which persisted for almost a year; and then worsening occurred. The late deaths among patients who underwent the Vineberg procedure, namely 5 of 25 survivors, or 20%, is very distressing. Only 11 of the 20 patients surviving the Vineberg procedure are classified as having a satisfactory result, and only 3 were completely free of angina.

Experience suggests, with particular reference to late deaths after the Vineberg procedure and the fair results with the Vineberg procedure alone among the survivors, that the combined approach utilizing coronary artery bypass procedure with the Vineberg procedure embraces the proper and wise operative approach.

Summary

The rationale and application of surgical revascularization of the heart has been described. The history and development of the various procedures have been emphasized. The diagnostic evaluation and indications for surgery have been reviewed. A small series of patients operated upon at Good Samaritan Hospital have been reviewed.

The authors support a more aggressive surgical approach to the problems of coronary artery disease. The current results of surgery strongly encourage that position. Emphasis has been placed upon the utilization of both direct and indirect revascularization procedures in the achievement of the best results possible.

References

1. Absalon, K. B., Lillihei, C. W., Aust, J. R., Varco, R. L. and Bakst, A. A.: Direct Surgery on the Coronary Arteries. Surgical Treatment of Occlusive Coronary Artery Disease by Endarterectomy or Anastomatic Replacement. Surg. Gynec. Obstet. 103:180, 1956.

2. Bailey, C. P.: Excision of Ventricular Aneurysm, in Surgery of the Heart. Philadelphia, 1955, Lea-Febiger, pp. 1043-1048.

3. Bailey, C. W., May, A., and Lemmon, W. M.: Survival after Coronary Endarterectomy in Man. JAMA 164:641, 1957.

4. Beck, C. S:: Development of a New Blood Supply to the Heart by Operation. Ann. Surg. 102:801, 1935.

5. Beck, C. W.: Coronary Disease After Twenty-five years. J. Thorac. Surg. 36:329, 1958.

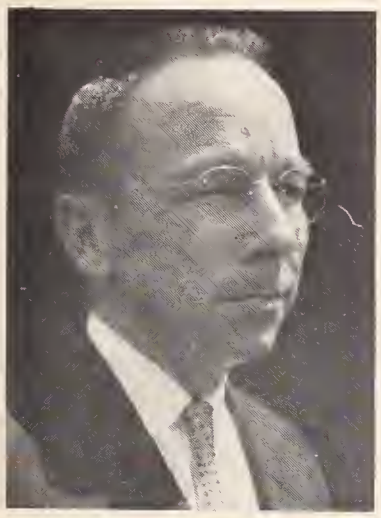
6. Beck, C. S., and Leightninger, C.: Scientific Basis for the Surgical Treatment of Coronary Artery Disease. JAMA 159:1263, 1955.

7. Bigelow, W. G., Aldridge, H. E., and McGregor, D. C.: Internal Mammary Artery Implantation (Vineberg Operation) for Coronary Heart Disease: Cineangiography and Long-Term Follow-up. Ann. Surg. 164:457, 1966.

8. Bloomer, W. E., Beland, A. J., Cope, J.: Clinical Use of the Splenic Artery for Myocardial Revascularization. Ann. Thorac. Surgery, 5:419, 1968.
9. Blumgart, H. L., Schlesinger, M. J. and Davis, D.: Studies on the Relation of the Clinical Manifestations of Angina Pectoris, Coronary Thrombosis and Myocardial Infarction to the Pathologic Findings. Amer. Heart J. 19:1, 1940.
10. Braunwald, E., Epstein, S. E., Glock, G., Wechsler, A. S. and Braunwald, N. S.: Relief of Angina Pectoris by Electrical Stimulation of the Carotid Sinus Nerves. New Eng. J. Med. 277:1278, 1967.
11. Cannon, J. A., Longmire, W. P., Jr. and Kattus, A. A.: Considerations of the Rationale and Technique of Coronary Artery Endarterectomy for Angina Pectoris. Surgery 46:197, 1959.
12. Campion, B. C., Harrison, C. E., Giuliani, E. R., Ellis, F. H., Jr. and Schattenberg, T. T.: Ventricular Septal Defect after Myocardial Infarction. Ann. Intern. Med. 68:1152, 1968.
13. Dart, C. H., Jr., Scott, S., Fish, R. and Takaro, T.: Direct Blood Flow Studies of Clinical Thoracic (Mammary) Arterial Implants. Circulation 51(Suppl.2): 11-64, 1970.
14. Diethrich, E. B., Liddicoat, J. E., Kinnard, S. A., and DeBakey, M. E.: An Analysis of Operated and Non-Operated Patients with Documented Coronary Arterial Disease. J. Thorac. Cardiovasc. Surg. 57:115, 1969.
15. Diethrich, E. B., Morris, J. D., Liddicoat, J. E. and Messinger, J. B.: Myocardial Revascularization: Evaluation of Autogenous Vein Grafts Between the Aorta and Myocardium. Ann. Thorac. Surg. 1:671, 1965.
16. Dudley, R. B., Cannon, J. A., Kattus, A. A., MacAlpin, R. N., and Longmire, W. P., Jr.: The Treatment of Coronary Occlusive Diseases by Endarterectomy. J. Thorac. Cardiovasc. Surg. 50:511, 1965.
17. Effler, D. B., Sones, F. M., Jr., Favaloro, R., and Groves, L. K.: Coronary Endarterotomy with Patch Graft Reconstruction. Ann. Surg. 162:590, 1965.
18. Effler, D. B., Sones, F. M., Jr., Groves, L. K., and Suarez, E.: Myocardial Revascularization by Vineberg's Internal Mammary Artery Implant: Evaluation of Postoperative Results. J. Thorac. Cardiovasc. Surg. 50:527, 1965.
19. Effler, D. B., Groves, L. K., Suarez, E. L., and Favaloro, R. G.: Direct Coronary Artery Surgery with Endarterotomy and Patch Graft Reconstruction: Clinical Application and Technical Considerations. J. Thorac. Cardiovasc. Surg. 53:93, 1967.
20. Effler, D. B.: Editorial. The Role of Surgery in the Treatment of Coronary Artery Disease. Ann. Thorac. Surg. 8:376, 1969.
21. Effler, D. B., Sheldon, W. C., Gibbon, J. A., Jr., Sabiston, D. C., Jr. and Spencer, F.: Surgery of the Chest, ed 2, Philadelphia, Toronto, London: W. B. Sanders, pp. 866-886.
22. Favaloro, R. G., Effler, D. B., Groves, L. K., Sones, F. M., Jr., and Ferguson, D. J.: Myocardial Revascularization by Internal Mammary Artery Implant. J. Thorac. Cardiovasc. Surg. 54:359, 1967.
23. Favaloro, R. G.: Saphenous Vein Autograft Replacement of Severe Segmental Coronary Occlusion. Ann. Thorac. Surg. 5:334, 1968.
24. Favaloro, R. G., Effler, D. B., Groves, L. K., Sheldon, W. C. and Sones F. M., Jr.: Direct Myocardial Revascularization by Saphenous Vein Graft. Present Operative Technique and Indications. Sixth Annual Meeting of The Society Thoracic Surgeons, Atlanta, Ga., 1970.
25. Ferlic, R. M., Quattlebaum, F. W., and Lillihei, C. W.: Experimental and Clinical Results of Myocardial Revascularization with Arterialized Autogenous Vein Graft. J. Thorac. Cardiovasc. Surg. 52:813, 1966.
26. Glover, R. P., Kitchell, J. R., Kyle, R. H., Davila, J. C. and Traut, R. G.: Experiences with Myocardial Revascularization by Division of the Internal Mammary Arteries. Dis. Chest 33:637, 1958.
27. Gorlin, R., and Taylor, W. J.: Selective Revascularization of the Myocardium by Internal Mammary Artery Implant. New Eng. J. Med. 275:283, 1966.
28. Green, G. E., Stertzer, S. H., and Rappert, E. H.: Coronary Arterial Bypass Grafts. Ann. Thorac. Surg. 5:443, 1968.
29. Green, G., Mundth, E. D., Harthorne, J. W., Buckley, M. J., Duismore, R. E. and Austen, W. G.: Direct Coronary Artery Revascularization for Segmental Occlusive Disease. Surgery 67:168, 1970.
30. Hattler, B. G., and Sabiston, .D C., Jr.: Myocardial Revascularization. Surgery 66:620, 1969.
31. Heimbecker, R. O., Lemire, G., and Chen, C.: Surgery for Massive Myocardial Infarction: An Experimental Study of Emergency Infarctectomy with a Preliminary Report on the Clinical Application. Circulation 37-38(Suppl.2):3, 1968.
32. Johnson, W. D., Flemma, R. J., Lepley, D., Jr. and Ellison, E. H.: Extended Treatment of Severe Coronary Artery Disease. A Total Surgical Approach. Ann. Surg. 170:460, 1969.
33. Kerth, W. J.: Aorto-Coronary Bypass Grafts. J. Thorac. Cardiovasc. Surg. 57:487, 1968.
34. Kirkin, J.: Year Book of Cardiovascular Medicine and Surgery. Chicago, Year Book Medical Publishers, Inc. 1968 pp. 321-331.
35. Lajos, T. Z., Greene, D. G., Bunnell, I. L., Falsetti, H. L., Federico, A. J. and Shimert, G.: Surgery for Acute Myocardial Infarction. Ann. Thorac. Surg. 8:452, 1969.
36. Longmire, W. P., Jr., Cannon, J. A. and Kattus, R. A.: Direct Vision Coronary Endarterectomy for Angina Pectoris. New Eng. J. Med. 259:993, 1958.
37. Meade, R. H.: A History of Thoracic Surgery, Ed. 1, Springfield, Illinois, Charles C. Thomas, Publisher, 1961, pp. 480-515.
38. McNally, E. M., and Benchimol, A.: The Vineberg Procedure. A Clinical Method for Assessing its Physiologic Efficacy. Am. J. Cardiol. 19:542, 1967.
39. Miale, J. B. and Bledsoe, A.: Pathologic Anatomy of Coronary Heart Disease. A.M.A. Arch. Path. 56:577, 1953.
40. Mundth, E. D., Harthorne, J. W., Buckley, M. J., Duismore, R. E., and Austen, W. G.: Direct Coronary Arterial Revascularization for Segmental Occlusive Disease. Surgery 67:168, 1970.
41. Murray, G.: The Pathophysiology of the Cause of Death from Coronary Thrombosis. Ann. Surg. 126:523, 1947.
42. Murray, G.: The Surgical Treatment of Coronary Artery Thrombosis. Canad. M. A. J. 67:100, 1952.
43. Murray, G., Porcheran, R., Hilario, J. and Roschlau, W.: Anastomosis of A Systemic Artery to the Coronary. Canad. M. A. J. 71:594, 1954.
44. Pearce, C. W., Hyman, A. L., Brewer, P., Smith, P. E. and Creech, O., Jr.: Myocardial Revascularization: Implantation of Intercostal Artery. J. Thorac. & Cardiovasc. Surg. 52:809, 1966.
45. Pifarre, R., Jasuja, M. L., Lynch, R. D. and Neville, W. E.: Myocardial Revascularization by Transmyocardial Acupuncture: A Physiologic Impossibility. J. Thorac. Cardiovasc. Surg. 58:424, 1969.
46. Khazei, A. H., Kime, W. P., Papdopoulos, C. and Cowley, R. A.: Myocardial Cannulization. A New Method of Myocardial Revascularization. Ann. Thorac. Surg. 6:163, 1968.
47. Report of Presidents Commission on Heart Disease, Cancer and Stroke. Vol. 1, Washington, D. C., U. S. Government Printing Office, 1964.
48. Sabiston, D. C., Jr., Fauteux, J. P. and Blalock, A.: An Experimental Study of the Fate of Arterial Implants in the Left Ventricular Myocardium. Ann. Surg. 145:927, 1957.
49. Sabiston, D. C., Jr., and Fonkulsrud, E. W.: Experimental Implantation of Arterial Homografts into the Ventricular Myocardium. Surg. Gynec. Obstet. 106:709, 1958.
50. Sawyer, P .N., Kaplitt, M., Sobel, S., Karlson, K. E., Studikey, J., Wechsler. B. M., Summers. D. N. and Dennis, C.: Experimental-Clinical Experiences with Coronary Gas Endarterectomy. Arch. Surg. 95:737, 1967.
51. Schlesinger, M. J. and Zoll, P. M.: Incidence and Localization of Coronary Artery Occlusion. Arch. Path. 32:178, 1941.
52. Sen, P. K., Udwadia, T. E., Kinare, S. G. and Parulkar, G. B.: Transmyocardial Acupuncture. J. Thorac. & Cardiovasc. Surg. 50:181, 1965.
53. Senning, A.: Strip Grafting in Coronary Arteries. J. Thorac. & Cardiovasc. Surg. 41:542, 1961.
54. Sewell, W. H.: Results of 122 Mammary Pedicle Implantations for Angina Pectoris. Ann. Thorac. Surg. 2:17, 1966.
55. Sheldon, W. C., Sones, F. M., Jr., Shirey, E. K., Fergusson, D. J. G., Favaloro, R. G. and Effler, D. B.: Reconstructive Coronary Artery Surgery: Postoperative Assessment. Circulation 29 (Supply. 1):61, 1968.
56. Sheldon, W. C., Favaloro, R. G., Sones, F. M., Jr., and Effler, D. B.: Reconstructive Coronary Artery Surgery. Venous Autograft Technique. JAMA 213:78, 1970.
57. Shimert, G., Layos, T. Z., Greene, D. G., Falsetti, H. L., Dean, D. C. and Bunnell, I. L.: Surgery for Postinfarction Complications. Circulation 38 (Suppl. 6):174, 1968.
58. Shumway, N. and Davis, L.: Christopher's Textbook of Surgery, Ed. 9. Philadelphia-London-Toronto: W. B. Saunders Co., pp. 501-502.
59. Sones, F. M., Jr. and Shirey, E. K.: Cine Coronary Arteriography, Mod. Concepts Cardiovasc. Dis. 31:735, 1962.
60. Spencer, F. C.: In Discussion of Johnson, W. D., Flemma, R. J., Lepley, D., Jr., and Ellison, E. H.: Extended Treatment of Severe Coronary Artery Disease. A Total Surgical Approach. Ann. Surg. 170:460, 1969.
61. Szilagy, D. E., McDonald, R. T. and France, L. C.: Applicability of Angioplastic Procedures in Coronary Arteriosclerosis: An Estimate through Postmortem Injection Studies. Ann. Surg. 148:447, 1958.
62. Taylor, W. J. and Gorlin, R.: Objective Criteria for Internal Mammary Artery Implantation. Ann. Thorac. Surg. 4:143, 1967.
63. Urschel, H. C., Jr., Miller, E. R., Razzuk, M. A., Alvarez, J. F., McNamara, J. J. and Paulson, D. L.: Aorto-to-Coronary Artery Vein Bypass Graft for Coronary Artery Occlusive Disease. Ann. Thorac. Surg. 8:114, 1969.
64. Vansant, J. H. and Muller, W. H., Jr.: Surgical Procedures to Revascularize the Heart. Review of the Literature, Ann. Thorac. Surg. 100:572, 1960.
65. Vineberg, A. M.: Development of An Anastomosis between Coronary Vessels and A Transplanted Internal Mammary Artery. Canad. Med. Ass. J. 55:117, 1946.
66. Vineberg, A. M.: Experimental Background of Myocardial Revascularization by Internal Mammary Artery Implantation. Supplementary Technics with Its Clinical Application in 125 Patients. Ann. Surg. 159:185, 1964.
67. Vineberg, A. M.: Technical Considerations for the Combined Operation of Left Internal Mammary Artery or Right and Left Internal Mammary Artery Implantations with Epicardiectomy and Free Omental Graft. J. Thorac. & Cardiovasc. Surg. 53:837, 1967.
68. White, J. C.: Cardiac Pain - Anatomic Pathways and Physiologic Mechanisms. Circulation 16:644, 1957.
69. White, M. and Hershey, J. E.: Multiple Transmyocardial Puncture Revascularization in Refractory Ventricular Fibrillation due to Myocardial Ischemia. Ann. Thorac. Surg. 6:557, 1968.
70. Zimmerman, H. A.: Editorial, The Dilemma of Surgery in the Treatment of Coronary Artery Disease. Amer. Heart J. 77:577, 1969.
71. Zimmerman, H. A.: Correspondence. Ann. Thorac. Surg. 8:477, 1969.

THE BREAST AND THE SURGEON

THE SURGICAL TREATMENT OF BREAST DISEASE IN A SMALL HOSPITAL



C. Herbert Fredell, M.D.

Until recent years the breast and its diseases have been considered the exclusive province of the surgeon. Treatment of breast diseases had remained surgical, in most instances, until other medical disciplines became interested in ways to diagnose and to treat them. Now radiologists, endocrinologists, pathologists, chemotherapists and immunologists are actively engaged in the research and treatment of breast diseases.

One of the reasons for the multidisciplinary approach to breast diseases and malignancy in particular has been the apparent standstill in the improvement of results of surgical treatment of breast cancer for the past 30 years. New theories, concepts and treatment regimens have been developed. Some have withstood the inquiries and criticisms of surgeons while others have not proven of merit. This has produced problems for the practicing surgeon who must evaluate and treat the individual patient, often in the small hospital setting.

This paper is a report of a 15-year experience with the surgical treatment of breast disease in a small hospital. It does not represent a massive accumulation of statistics, nor does it attempt to prove any particular thesis. It reflects an approach that the practicing surgeons in a small community hospital have taken towards the problem.

During the past 15 years the Flagstaff Hospital has grown from a 50 bed hospital to a 100 bed institution. During this time a multidisciplinary approach to malignancy evolved. A tumor committee was formed, more sophisticated pathological techniques were instituted, Cobalt teletherapy became locally available, and a cancer chemotherapist joined the professional community.

It is not within the scope of this paper to review the total current literature concerning

breast diseases and breast malignancy. A few writings merit the readers' attention, however. An excellent monograph by Spratt and Donegan[1] concerning cancer of the breast and recent papers by Haagensen[2], Payne[3], Witten[4], Fisher[5], and Rubin[7] should be consulted.

In a recent cooperative study Haagensen[2] and others presented clear evidence that in properly selected patients who are clinically free of axillary lymph node involvement, the radical mastectomy is the therapy which yielded the best long term results.

Payne and others[3] reported a recent analysis of a 54-year experience with cancer of the breast at the Mayo Clinic. He noted that overall there is lack of appreciable differences in the results of standard radical mastectomy as contrasted to less extensive surgery combined with various adjuvant physical and chemical agents. He noted that in the final analysis, the pathologists assessment of the involvement of the axillary lymph nodes is the main determinant in survival. He found little evidence that radiation had any effect on ultimate survival.

Fisher et al[5] presented a cooperative study relating to the use of adjuvant chemotherapy, noting that specific drugs have definite but strictly limited value in breast cancer. Thio-tepa is of some benefit in the premenopausal patient, with four or more axillary lymph node metastases, but in other patients it is valueless. The highly toxic 5-Fluorouracil was considered unwarranted as an adjuvant to breast surgery.

Theologides and Kennedy[8] concluded that the therapeutic management of advanced female breast cancer must be a sequential long range program. Concomitant therapy was not recommended. They felt that prophylactic castration was unwarranted.

Prophylactic removal of the second breast following a radical mastectomy has received more attention in recent reports. Leis[9] noted that the incidence of second breast malignancy ranged from 7.5% to 19%. When a woman is under 50 years of age; when there is a family history of breast cancer; and when the cell type of the cancer removed was lobular carcinoma, colloid carcinoma, medullary carcinoma or comedocarcinoma, there is a significantly higher risk in retaining the remaining breast.

Speculation and conjecture are increasing in the literature concerning the role of immunity and the patient survival following treatment for breast cancer. Meyer[10] noted a failure of radiation to improve survival after mastectomy and a failure to respond to hormone treatment after irradiation therapy.

Materials and Methods:

A retrospective examination of all of the hospital records of patients having breast surgery in the Flagstaff Hospital for the past 15 years has been done.

A total of 399 cases have been studied. There were 449 surgical procedures. Surgical procedures performed have been 1) Excision of breast tumor—352 cases; 2) Radical Mastectomy—49 cases; 3) Simple Mastectomy—26 cases, and 4) Drainage of Breast Abscess—22 cases. It is of note that there have been no mammoplastic procedures performed during the entire period of this study. The small community hospital is not the best location to perform these infrequently indicated procedures.

In the 426 procedures in which pathological examination was done, the frozen section technique was used in 249 specimens. During the past three years over 90% of surgically excised breast tissue has been examined by the hospital pathologist by the rapid frozen section technique. In the 57 cases of carcinoma the final diagnosis was deferred for further examination other than the frozen section in two cases.

There were 22 procedures for benign disease and one procedure for malignant disease in male patients. The remainder were done in female patients. The age incidence of breast cancer was significantly higher in the 40 to 65 year period. The location of the malignancy was predominantly in the upper outer quadrant of the breast. The pathological diagnoses are summarized in Table 1.

Emphasis was directed to those cases with breast malignancy. The treatment of that group of diseases is summarized in Table II. The Columbia Clinical Classification was used in selecting most of the patients who were considered candidates for radical mastectomy. A total of 49 cases of radical mastectomies, 5 cases of simple mastectomies and 3 cases of excision of tumor for cancer have been done. The stage of the disease after the mastectomy specimen had been examined by the pathologist has been used to relate survival and further treatment to the total picture. The presence of microscopically in-

TABLE I
Flagstaff Hospital 8/1/56 to 8/1/70
399 Cases 449 Procedures
Postoperative Pathological Diagnosis

1. Breast Tumor Excision		352
a. Fibrocystic Disease	159	
b. Mazoplasia	35	
c. Sclerosing Adenosis	24	
d. Fibrous Mastitis	14	
e. Comedomastitis	1	
f. Fibroadenoma	88	
g. Intraductal Papilloma	6	
h. Ductal Hyperplasia	7	
i. Fat Necrosis	8	
j. Lipoma	5	
k. Ductal Ectasia	2	
l. Carcinoma	3	
2. Simple Mastectomy		26
a. Gynecomastia	21	
b. Carcinoma	5	
3. Drainage of Breast Abscess		22
4. Radical Mastectomy		49
a. Scirrhous Carcinoma	23	
b. Intraductal Carcinoma	18	
c. Adenocarcinoma	4	
d. Lobular Carcinoma	2	
e. Carcinoma Simplex	1	
f. Medullary Carcinoma	1	

volved axillary lymph nodes was the factor considered of greatest importance. It is of note that 20 out of 49 cases having radical mastectomy had positive axillary lymph nodes.

In the follow-up study of the 29 cases of carcinoma of the breast that had no axillary lymph nodes found to contain tumor, there have been two deaths and two patients are alive with recurrence. Among the 20 cases in which the axillary lymph nodes were involved with metastatic breast cancer with no evidence of any further spread of the disease, there have been 6 deaths.

TABLE II

A. The Initial Treatment of Carcinoma of the Breast — 57 cases

Procedure	Stage of the Disease: Localized to the Breast	Axillary Lymph Nodes Involved	Distant Metastases
1. Radical Mastectomy	23	13	
2. Radical Mastectomy & Thio-tepa	6	7	
3. Simple Mastectomy	1	2	2
4. Excision of Tumor	2		1
Total Cases	32	22	3

B. The Subsequent Teratment of Carcinoma of the Breast — 26 Cases

Procedure	Irradiation	Irradiation & Endocrine Abl'n	Irradiation & Endocrine & Chemicals
& Thio-tepa No nodes involved			
1. Radical Mastectomy No nodoes involved	3	1	
2. Radical Mastectomy Nodes involved	5	5	3
3. Radical Mastectomy	3		
4. Simple Mastectomy	3	1	
5. Excision of Tumor	2		

No known patients are alive with recurrence. Two patients were lost to follow-up.

There is one survivor among the 5 cases of simple mastectomy. The four who were done for palliative purposes are dead. Of the three cases that had excision only of the tumor, one case is alive 7 years later free of disease, one case is dead and one is lost to follw-up.

Follow-up periods for the survivors of surgery for cancer of the breast and the various groups of patients in this study are not large enough to permit definitive conclusions.

Among the surviving patients a wide variety of treatment programs has been used. In the past the individual preference for sequence of treatment and particular adjuvant treatment used has been that of the operating surgeon. A degree of uniformity has been achieved in recent years by the multidisciplinary approach to this problem.

Adjuvant treatment has included the intraoperative and postoperative administration of Thio-tepa, the use of male and female hormones, the use of irradiation to localized areas, and the use of various chemicals either alone or in combinations, when the beneficial effect of other adjuvant measures wanes. The use of oophorectomy and adrenalectomy has been done on an emperical basis with only one case of survival among the 8 cases that had the additional surgical procedures. As a palliative measure it appears that ablative surgery does help the patient with metastatic disease. When ablative surgery is offered to the patient, the surgeon should clearly define the limits of the procedure to the patient. Along with many other surgeons, we have a certain ambivalence about creating an Addisonian patient when the patient already has the problems of severe metastatic malignancy. The philosophy of the patient and the individual surgeon enter into this decision.

The morbidity of breast surgery has been low. There were 3 cases of primary wound infection in the 400 clean nonmajor procedures. Among the 49 radical mastectomy patients there have been no primary wound infections. There have been 5 cases of skin slough sufficient to delay wound healing. There have been 9 cases of late arm swelling. There have been no postoperative deaths among the entire series of cases.

Comment:

The surgical treatment of breast disease in the

small hospital is similar to that done in the larger hospital. The availability of other medical disciplines to help treat the breast cancer patient has become a necessity. If this is not the case in a small hospital setting the surgeon should re-evaluate his approach to this problem so that he can offer his patient the benefits of a multidisciplinary approach. At times the best interests of the patient are served by referral to an institution where this can be done.

In this series of 449 procedures on 399 patients, there were no postoperative deaths and the morbidity has been acceptably low. Among the 49 cases requiring radical mastectomy, a frozen section diagnosis was made in 47 cases. In the other two cases, a permanent section pathologic diagnosis was made. The morbidity following radical mastectomy has been acceptable. The follow-up period covers a total time of 15 years, yet the cases are scattered throughout this time period so that there is not a large group that can be clustered into a statistically significant study. There were 8 deaths following radical mastectomy during the period of this study and there are two patients alive with known recurrent disease.

The problem of follow-up of patients who have had surgery for a malignancy has been more difficult since the population of this country has become more mobile and the art of letter writing by physicians, one to another, is decreasing.

The probable changing status of some of the treatment regimes and the size of the group involved will make the long term followup of certain types of cases of little value statistically. Several of the cases in this small series have been followed for too short a period of time to be meaningful concerning cure. The need to follow-up breast cancer cases for a ten year period instead of only a five year period before cure can be expected, has been established.[2]

Discussion:

Early detection of breast disease leads to early diagnosis and early treatment with the best results. The carefully done self-examination of the breast by the patient and the physical examination by the physician are still the main site of cancer detection. Mammography has now been perfected to be of enough value to warrant its frequent use. The goal of mammography is to detect clinically unsuspected lesions. It is a good screening test for patients who have had a mastectomy for malignancy or for a patient who has a family history of breast cancer. In the asymptomatic patient with neither of these circumstances it is not valuable enough to warrant its time or expense. On occasion the mammogram will reveal findings not suspected by the examiner and a biopsy is indicated. On other occasions the physical examination will be the sole indication for surgery in the presence of normal mammograms. Mammography does not replace a good physical examination and cannot be used as a substitute.[4]

There are few other areas of surgery that merit more proper preoperative counseling by the physician than the patient with surgical breast disease. The current massive preoccupation amongst the laity concerning sex appeal and the female breast often creates a complicated emotional climate in which the physician must embark. A gentle, frank, and realistic discussion with the average patient often will assist in the necessary adjustment the patient must face. A conversation with a well-adjusted postoperative breast surgery patient often helps. If the physician expects serious emotional problems he should seek psychiatric consultation before the planned surgery.

After a mass has been identified, its character should definitely be established. Needle aspiration of breast masses is being done in the offices of several surgeons and non-surgeons. The author has little experience in this technique and plans to acquire no more. The coexistence of malignancy with fibrocystic disease has been recently reported.[6] Properly done needle aspiration only postpones a probable surgical procedure and entails involved instructions with the patient. There is an element of risk that is entirely unnecessary.

Simple excision is a definitive solution to a mass in the breast. Fortunately the anesthetic risk and operative risk are very low. Unfortunately the financial risk is high for such minor surgery. The cost of hospitalization and the availability of time on operating schedules and the availability of vacant hospital beds modifies our ideal management of this problem. The ambulatory excision of a breast mass should always be a therapeutic procedure. If it is a diagnostic procedure, the excision should be done in the hospital operating room with a frozen section microscopic examination being done while the

patient is anesthetized.

After studying a voluminous amount of literature concerning surgical diseases of the breast and looking back over a 15 year surgical experience in a small community hospital, the author has formed several opinions concerning breast cancer.

1. Any discrete mass in the breast is a cancer until proven otherwise by histological examination done by a competent pathologist. Once diagnosis of malignancy has been made the treatment should proceed without delay.

2. Prior to embarking upon a radical mastectomy for cancer of the breast the surgeon should select his patient on some routine basis such as the Columbia Clinical Classification. He should be as certain as possible that the disease is confined enough so that a radical mastectomy offers the best method of cure. Less extensive surgical procedures or combinations of surgery and adjuvant therapy should be used if there is any doubt about the probable effectiveness of radical surgery. The intraoperative use of Thio-tepa concomitant with a radical mastectomy is only indicated if the surgeon expects to find axillary metastases.

TABLE III

The Results of Treatment of Carcinoma of The Breast — 57 Cases
Flagstaff Hospital 8/1/56 to 8/1/70

1. Operative Deaths — None
2. Postoperative Complications
 a. Primary wound infection — None
 b. Skin slough with delayed wound healing — 5 cases
 c. Persistent arm enlargement — 9 cases
3. Follow-up Periods Free of Disease

Initial Procedure	Lymph Nodes Involved	Lymph Nodes Not Involved	Time Since Surg. Less than 5 yrs	5-10 yrs	10 yrs
Radical Mastectomy		23	14(2*)	6	1
Radical Mastectomy	13		6		1
Radical Mastectomy & Thio-tepa		6	5	1	
Radical Mastectomy & Thio-tepa	7		5		
Simple Mastectomy	4	1	1		
Excision of Tumor	2	1		1	

*alive with recurrence

4. Late Deaths
 a. 29 Cases — Disease Limited to Breast
 2 Deaths — 14 mos. and 27 mos. following procedure
 b. 20 Cases — Disease in the Breast and Regional Lymph Nodes
 6 Deaths — 6 mos., 21 mos., 24 mos., 30 mos., 34 mos., and 102 mos. following the primary procedure
 c. 8 Cases — Simple Mastectomy and Excision of Tumor
 6 Deaths — 9 mos., 18 mos., 21 mos., 34 mos., 38 mos., and 60 mos. following the primary procedure

3. The use of adjuvant measures for the breast cancer patient should only be therapeutic and not prophylactic. The sequence of the different treatment modalities that are required for the patient with metastatic breast malignancy should be determined by a single physician or surgeon who acts as the "captain of the team" in consultatino with a multidiscipline tumor oriented group of other physicians. The field of adjuvant therapy of alignancy is still a variable and changing one to the point that national level committees have been formed and cooperative studies are being done so that the best answers can be found.

4. Fortunately there are several different avenues that a breast cancer patient can pursue when all of the disease has not been surgically excised. Palliation and prolongation of life is our treatment goal. When the treatment makes the patient's life more unbearable than when no treatment is used, the treatment should promptly be discontinued. Availability of our treatment ability does not always justify its use.

Summary:

1. A study of a 15 year experience with breast surgery iin a small community hospital has been done. 399 cases of breast disease were treated surgically.

2. Tretament of breast disease in the small hospital differs little from the larger hospital in that comparable treatment programs, results of surgery, complications and postoperative deaths have been obtained.

3. Radical mastectomy, often with adjuvant therapy, remains the best available means of treating localized (in so far as we can determine) malignancy of the breast. Effective palliation can be achieved by several combinations of therapeutic modalities available.

References

1. Spratt, J. S., and Donegan, W. L.: Cancer of The Breast, vol. 5, Major Problems in Clinical Surgery, Philadelphia: W. B. Saunders, 1967.
2. Haagensen, C. D., et al: Treatment of Early Mammary Carcinoma, Ann Surg. 170-875-899 (Dec.) 1969.
3. Payne, W. S., et al: Surgical Treatment of Breast Cancer, Arch Surg. 101:105-113 (Aug) 1970.
4. Witten, D. M.: The Breast, Atlas of Tumor Radiology, Chicago: Yearbook Medical Publishers Inc., 1969.
5. Fisher, F., et al: Surgical Adjuvant Chemotheropy in Cancer of The Breast — Results of a Deade of Cooperative Investigation, Ann Surg 168:337-356, 1968.
6. Schwartz, A. M., and Sigelman. Non Palpable Carcinoma in Fibrocystic Disease of the Breast, Surg, Gynec & Obst 126:94-98 (Jan) 1968.
7. Rubin, P.: Carcinoma of the Breast, Current Concepts in Cancer. No. 13, JAMA 199:732-745 (Mar. 6) 1967.
8. Theologides, A., and Kennedy, B. J.: Therapeutic Management of Advanced Female Breast Cancer, Modern Medicine 74-78 (Jan. 1) 1968.
9. Leis, H. P.: Prophylactic Removal of the Second Breast, Hospital Medicine, 4:45-55 (Jan) 1968.
10. Meyer, K. K.: Radiation-Induced Lymphocyte-Immune Deficiency, Arch Surg 101:114-117 (Aug) 1970.

THE TREATMENT OF TRAUMATIC DISRUPTION OF THE DESCENDING THORACIC AORTA

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A HIGH INDEX OF SUSPICION AND EARLY ANGIOGRAPHIC STUDY ARE CERTAIN TO SOME LIVES IN TRAUMATIC AORTIC TRANSECTIONS. A LESION OF OUR MODERN HIGHWAY CARNAGE, TI IS WORTHY OF ALL PHYSICIAN'S ATTENTION AND AWARENESS.

The expanding availability of high speed automobile and expressways has resulted in an increase in the number of patients seen in emergency rooms following automobile accidents. Grenndye[1] found that one out of every six autopsied victims of automobile accidents sustained an aortic disruption. This injury was generally associated with accidents characterized by sudden deceleration. Approximately 15% of individuals with traumatic rupture survive long enough for surgical repair providing the diagnosis is made promptly.[2] Survivors of the disruption include those whose hemorrhage is contained by the aortic adventitia and surrounding tissue, but who may die of delayed rupture in the first few weeks; and those survivors who develop a false aneurysm which may remain stable for long periods of time.[3]

Early recognition and aggressive treatment can lead to a significant increase in survival of patients with this injury.

CLINICAL MATERIAL

During a one year period between July 1, 1969 and July 2, 1970, five patients were treated on the surgical services of St. Luke's Hospital and the Maricopa County General Hospital with traumatic ruptures of the descending thoracic aorta. These patients were treated from four hours to twelve years following their original injury. Since the same disease process is present in both acute aortic disruptions and chronic traumatic aneurysms, they will be considered together in this presentation.

Case 1.

J. S., a 20 year old Mexican-American male, was admitted following an auto accident with hypotension, abdominal pain and tenderness. Emergency surgery was undertaken; a laceration of the liver repaired, and a cholecystostomy performed. Because of continued complaints of posterior chest pain, dyspnea, systolic hypertension, decreased femoral pulses and a widened mediastinum on chest x-ray; an aortogram was done. This demonstrated rupture of the descending thoracic aorta. Emergency thoracotomy was performed twelve hours after injury and direct suture of a completely transected aorta, utilizing

left atrial to left femoral artery partial left heart bypiss was performed. The patient had an uncomplicated postoperative course, and is well ten months following surgery.

Case 2.

A. S., a 20 year old American Indian female, was admitted in a comatose condition following an auto accident. She recovered from her head injury and facial lacerations were repaired. An aortogram was performed because of a systolic murmur, heard best over the posterior chest. This demonstrated a rupture of the descending thoracic aorta. Seventeen days after injury she was taken to the operating room where a complete transection of the descending thoracic aorta was repaired with a dacron graft, utilizing a left atrium to left femoral artery left heart partial bypass. The patient had an uncomplicated postoperative course, and is well ten months following surgery.

Case 3.

G. W., a 53 year old white male, was admitted to the hospital after an auto accident, and promptly suffered a cardiac arrest in the emergency room. Resuscitation was successful although the patient remained hypotensive. A tracheostomy was performed because of multiple rib fractures and a flail chest. Due to a superior mediastinal widening on initial chest x-ray, an aortogram was performed. This demonstrated a rupture of the descending thoracic aorta. Although the patient was in shock without demonstrable blood pressure, he was taken to the operating room 12 hours postinjury where complete transection of the aorta with 4,000 cc of blood in the left chest was discovered. Utilizing left femoral vein to left femoral artery partial cardiopulmonary bypass, the transection was repaired with a dacron graft. Unfortunately, cardiac arrest occurred and the patient could not be resuscitated.

Case 4.

L. P., a 53 year old white female was admitted to the hospital following an auto accident. Tracheostomy was performed for a severe flail chest. Fractures of the ribs, right femur and dislocation of the right hip were identified. Because of a widened mediastinum on chest X-ray, an aortogram was performed which showed rupture of the descending thoracic aorta. She was taken to the operating room four hours after injury. A complete transection of the aorta was repaired by direct anastomasis, using left atrium to left femoral artery partial left heart bypass. Her postoperative course was uncomplicated and she is well four months following her surgery.

Case 5.

G. R., a 32 year old white male was admitted to the hospital for evaluation of a severe, progressive cough, and a left mediastinal mass. A chest x-ray taken five years before had been unremarkable. He gave a history of being involved in an auto accident twelve years prior to admission in which he suffered a cerebral concussion, bilateral rib fractures, and a fractured pelvis. Aortogram demonstrated an aneurysm of the descending thoracic aorta. The patient was taken to the operating room where a complete transection of the descending aorta, with a false aneurysm compressing the left main stem bronchus, was identified. Utilizing left atrium to left femoral artery partial left heart bypass, the transected ends were approximated with a dacron graft, leaving the aneurysm wall in place. The patient had an uncomplicated postoperative course and is well 15 months following his surgery.

DISCUSSION

All of our patients, and the majority of such patients, sustained their aortic disruptions as a result of deceleration-type auto accidents. The disruptions in all of our patients were in the aortic isthmus; that is, just distal to the left subclavian artery at the level of the ligamentum arteriosum. In most published series, over 50% of aortic disruptions are found in this area.[1, 2] The exact mechanism responsible for the high incidence of disruptions found in this area is not known. Perhaps the most widely accepted explanation is that aortic disruption is caused by differential deceleration of different portions of the aorta, depending on their degree of fixation.[4] The aortic isthmus is the point where the more mobile descending thoracic aorta joins the relatively fixed aortic arch.[2] All of our patients had complete transections of the aorta with the disrupted ends lying 4 to 6 cm apart. In the acute cases, the aortic blood flow and hematoma were contained only by the aortic adventitia and surrounding tissue (Fig. 1). In the chronic case, a pseudoaneurysm had formed. A high index of suspicion should be reserved for patients in deceleration type auto accidents of having sustained an aortic disruption. Clinical

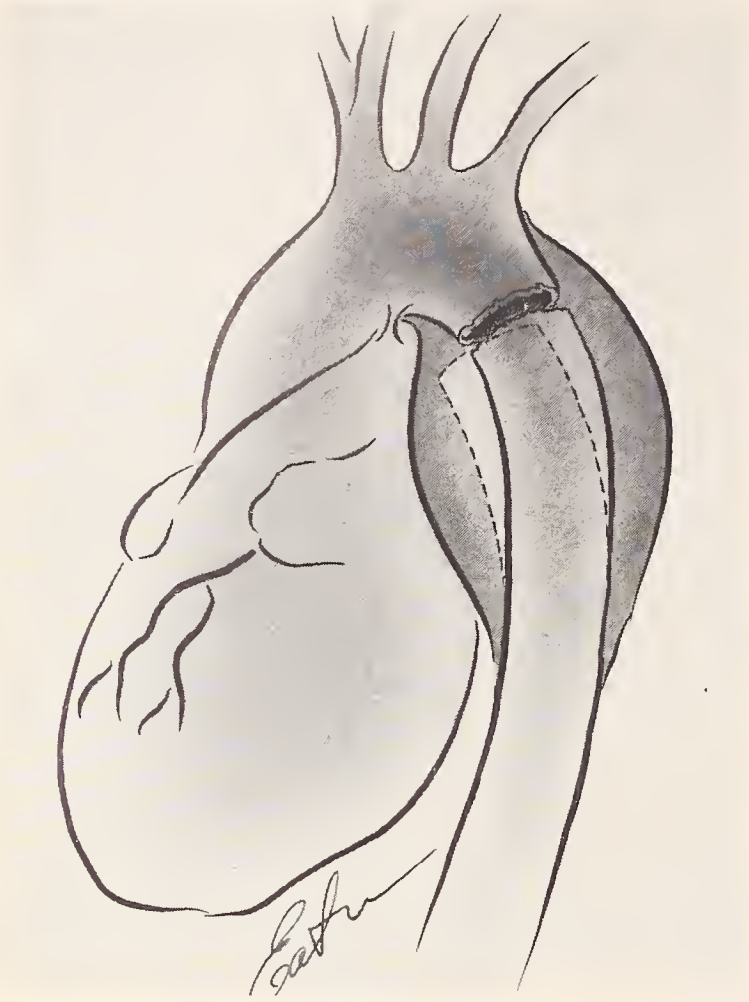


Figure 1
Illustration of a complete aortic disruption with surrounding hematoma contained only by aortic adventitia and surrounding tissue.

signs may be minimal, or masked by additional severe injuries to other organ systems. The variety of other injuries that may be encountered is demonstrated by the following associated injuries seen in our patients: Three patients had multiple rib fractures, two patients had flail chests, three patients had cerebral concussions, three patients had major skeletal fractures or dislocations, and one patient had a laceration of the liver. Three patients were in shock on admission, three patients were unconscious, and one patient had a cardiac arrest in the emergency room. Three patients had surgery performed before the diagnosis of disruption was made. Two patients had tracheostomies, and the other, laparotomy and repair of a lacerated liver. On physical examination: dyspnea, chest pain, shock, and evidenee of blood in the left chest may be nonspecific findings. One of our patients demonstrated signs of pseudocoarctation, as described by Malm and Deterling;[5] consisting of hypertension in the upper extremities, and diminished pulses in the lower extremities. This is probably secondary to compression and aortic obstruction by the expanding hematoma. The femoral pulses were normal in the remaining patients, except for the patient who was hypotensive throughout his brief hospital course. Two of our patients were discovered to have systolic murmurs heard maximally over the left posterior chest. Indeed, in one patient, this was the only physical or x-ray finding present, end led to the eventual diagnosis. In our patient with the chronic traumatic aneurysm, his admitting complaint was a dry hacking cough of recent onset.

Perhaps the one finding that is the most consistent in alerting the physician to the possibility of aortic disruption, is widening of the superior mediastinum on chest x-ray (Fig. 2). This was seen in all but one of our patients. Flaherty, et al,[6] has pointed out that this is a nonspecific finding, and can be found with tumors, mediastinitis, esophageal perforation, and other forms of mediastinal hemorrhage. Decreased sharpness of the aortic outline with a loss of the aortic knob shadow, however, adds to the significance of mediastinal widening by almost always being associated with aortic disruption. Other x-ray findings he describes as being of value are deviation of the trachea to the right, inferior displacement of the left main stem bronchus, pleural effusion, and delayed or recurrent hemothorax. In the chronic traumatic aneurysm, the initial mediastinal widening develops into a well marginated mass in the region of the aortic knob (Fig. 3). This may eventually become calcified.

Aortography should be performed in all cases, unless the need for immediate aortic control is obvious. Aortography is necessary not only to confirm the diagnosis, but to evaluate the remainder of the aorta (Fig. 4). Parmley, et al,[2] has shown that aortic disruption occurs at multiple sites in 6% of cases. Several investigators have pointed out that the aortic tear may not be seen at surgical exploration unless the aorta is opened and the intima inspected.[7, 8] In three of our cases aortography was performed by the retrograde route and two by the transaxillary route. If disruption of the aortic isthmus is suspected, the preferred method is percutaneous right transaxillary catheterization to avoid manipulation in the area of the disruption.[6] A saccular dilatation of the aorta in the area of the isthmus is usually seen in both the acute and chronic false aneurysm, although the chronic aneurysm may be filled with clot and angiographically may demonstrate a normal lumen (Fig. 5).[6]

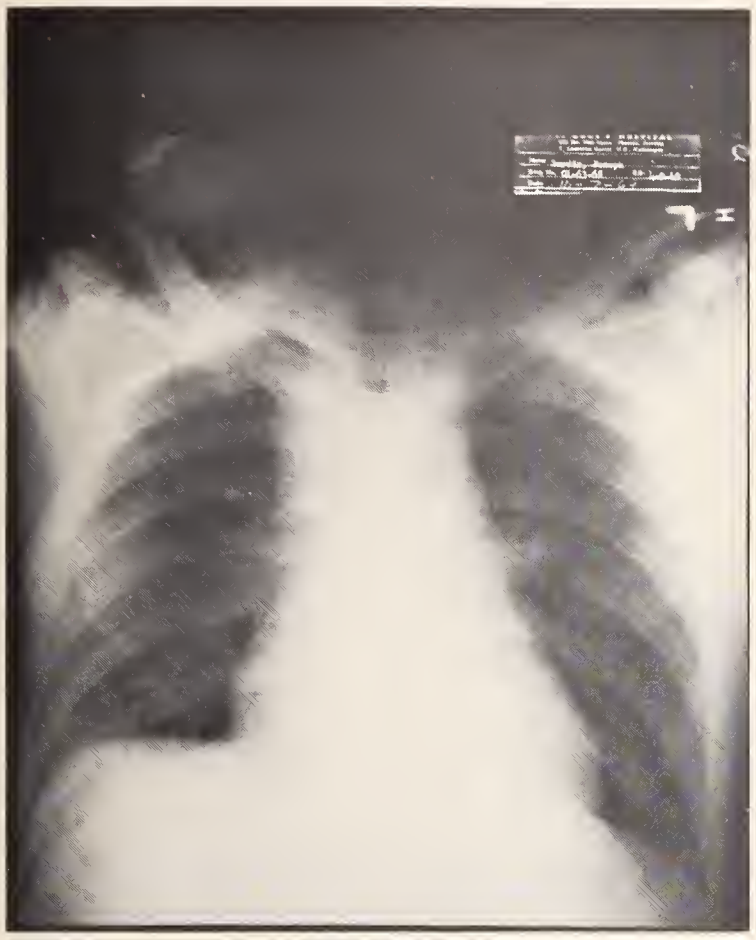


Figure 2
Preoperative chest film on Case 1, showing the widened superior mediastinum seen in acute aortic disruption.



Figure 3
Preoperative PA chest laminogram on Case 5, showing the well marginated mass in the region of the aortic knob. A thin layer of calcium in the wall is visible.



Figure 4
Aortogram on Case 4, demonstrating an acute aortic disruption.



Figure 5
Aortogram on Case 5, demonstrating a chronic traumatic aneurysm.

Three of our patients with acute aortic disruptions were operated on as emergencies 4 to 12 hours after injury. The patient 17 days after injury, and the patient with a chronic traumatic aneurysm, were operated on as planned procedures. The treatment of the acute disruption and chronic aneurysm are essentially the same. Although the need for immediate repair of the acute disruption is unquestioned, there is some difference of opinion as to whether the chronic aneurysm should be always attacked surgically. The long-term stability and lack of symptoms of many chronic traumatic aneurysms has been pointed out.[9] On the other hand progressive enlargement and repair has been repeatedly described in seemingly stable aneurysms.[3, 7, 10] Using improved methods of treatment, repair of chronic traumatic aneurysms has been very successful, as illustrated by Cooley's report of 60 consecutive surgical corrections without mortality. With this in mind, many authors have advocated repair of the chronic, stable traumatic aneurysm.[10, 12, 13] Obviously, each patient has to be evaluated individually as to age, medical condition and severity of disease. If no medical contraindication exists, the majority of traumatic aneurysms, certainly the expanding and symptomatic ones, should be repaired.

During repair of an acute aortic disruption or chronic traumatic aneurysm, some consideration must be given to protection of organs, especially the spinal cord, distal to the aortic cross clamp. In addition, consideration must be given to reduction of left heart strain from proximal aortic occlusion. Perhaps the most widely used technique has been left atrial to femoral artery partial left heart bypass, as described by Cooley, et al,[14] and Gerbode, et al,[15] (Fig. 6A). Another well accepted technique has been femoral vein to femoral artery bypass, using a pump oxygenator as described by Neville, et al,[16] (Fig. 6C). This eliminates the need for a some-

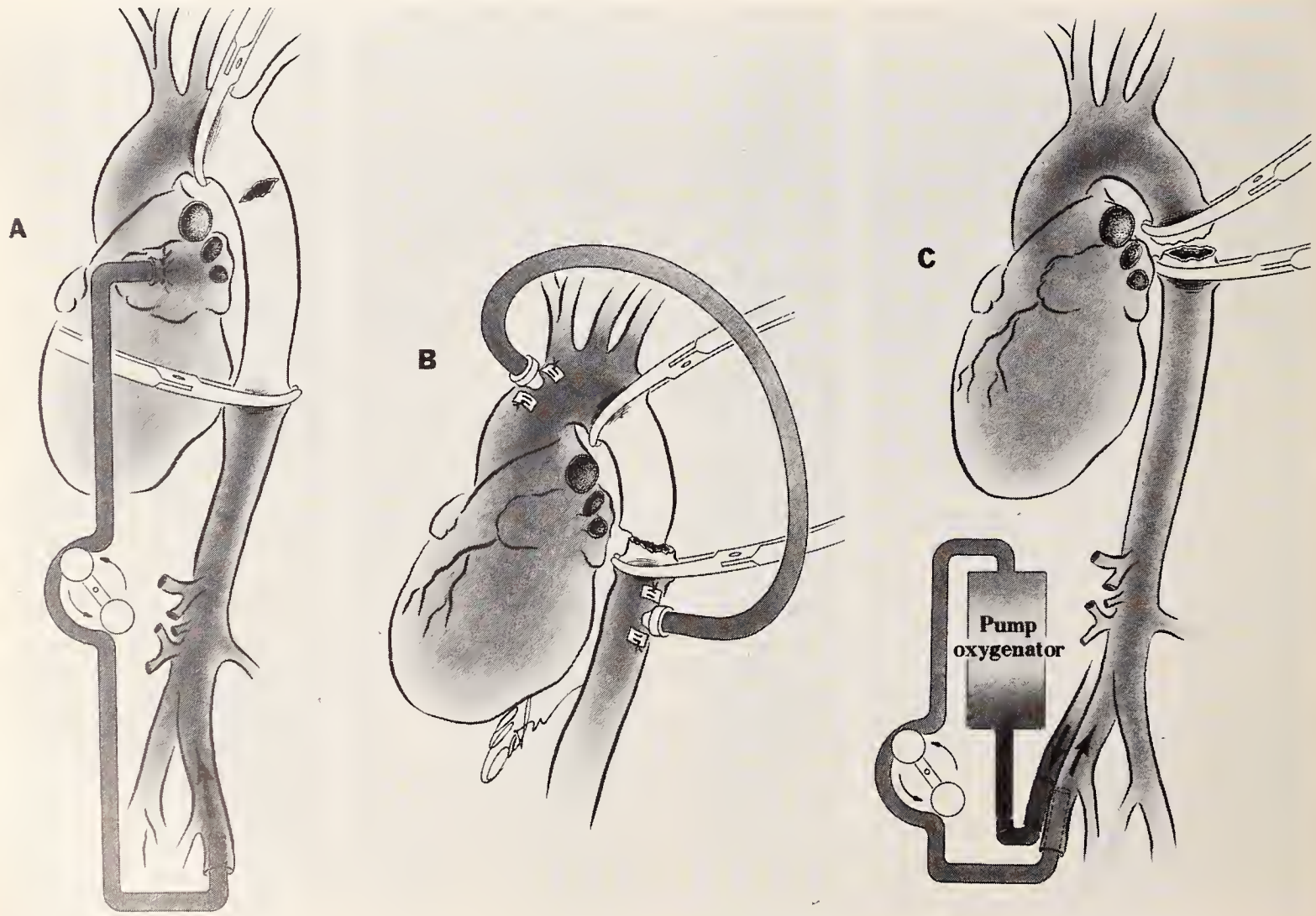


Figure 6

Fig. 6 (A) Left atrial to femoral artery partial left heart bypass. (B) External aorto-aorta shunt. (C) Femoral vein to femoral artery bypass utilizing a pump oxygenator.

times difficult cannulization of the left atrial appendage, and a cumbersome atrial catheter in the operative field. Four of our cases utilized partial left heart bypass and one case peripheral cardiopulmonary bypass. There was no evidence of distal organ damage in the survivors. Kirsh, et al,[15] has presented a series of 12 cases of acute traumatic aortic rupture repaired, utilizing an external shunt composed of two stainless steel arterial cannulas connected to Tygon tubing (Fig. 6B). He reports only one patient with postop paraplegia attributed to the use of a cannula of inadequate size. This method avoids the use of Heparin in patients who usually have multiple serious injuries, decreases the operative time and simplifies the equipment needed. Crawford, et al,[18] feels that factors such as the amount of aorta excised, the number of its branches ligated, and the nature and extent of disease are more important than the time of aortic cross-clamping in the production of paraplegia. He presented 20 patients with repair of various types of thoracic aortic aneurysms in whom bypass or shunts were not employed and paraplegia occurred in 2 patients (present in one patient before surgery). Aortic occlusion time was less that 30 minutes in 70% of these patients.

In three of our cases the aortic ends were approximated with the interposition of a woven dacron graft. In the other two patients, transected ends were easily approximated by direct suture. We would agree with Alley,[19] that when the aortic ends are not traumatized or pathologically involved, and can be approximated without excessive tension, a graft should be avoided.

Dumanion, et al,[20] recently presented two cases of traumatic aneurysm; the first involved the aortic arch, and the second involved the first portion of the descending thoracic aorta rupturing into the pulmonary artery. Both of these were successfully treated by closing the mouth of the aneurysm directly from inside the aorta with the patient under profound hypothermia and circulatory arrest. This may prove to be a valuable method of treatment for complicated cases.

SUMMARY

A one year's experience with tramatic rupture of the descending thoracic aorta consisting of five cases treated at various time intervals after injury, is presented. Most of these injuries occur after automobile accidents characterized by sudden deceleration. A constant awareness of the possibility of this injury, in patients involved in such accidents, must be maintained because findings are frequently minimal or obscured by other injuries. A widened superior mediastinum on chest film is probably the most valuable diagnostic clue. Aortography should be obtained if possible. Chronic traumatic aneurysms may appear to be stable, but some rupture after long periods of time. If no contraindication exists, especially in the sympomatic or expanding chronic aneurysms, most should be repaired. The technical aspects of surgical repair are discussed. The fact that four of our five patients are alive and well attests to the fact that, with prompt treatment, repair can be successful.

BIBLIOGRAPHY

1. GREENDYKE, R. M.: Traumatic Rupture of Aorta, JAMA, 195:527, 1966.
2. PAMLEY, L. F., MATTINGLY, T. W., MANION, W. C., and JAHNKE, E. J., Jr.: Non-Penetrating Traumatic Injury of the Aorta, Circulation, 17:1086, 1958.
3. SPENCER, F. C., GUERIN, P. F., BLAKE, H. A., and BAHNSON, H. T.: A Report of Fifteen Patients with Traumatic Rupture of the Thoracic Aorta, J. Thoracic Cardiovascular Surgery, 41:1, 1961.
4. HAAS, G. M.: Types of Internal Injuries of Personnel Involved in Aircraft Accident, J. Aviation Med., 15:77, 1944.
5. MAIM, J. R., and DETERLING, R. A.: Traumatic Aneurysms of the Thoracic Aorta Simulating Coarctation, J. Thoracic Cardiovascular Surgery, 40:271, 1960.
6. FLAHERTY, T. T., WEGNER, G. P., CRUMMY, A. B., FRANCYK, W. P., and HIPONA, F. A.: Non-Penetrating Injuries to the Thoracic Aorta, Radiology, 92:541, 1969.
7. EISEMAN, B., and RAINER, W. G.: Clinical Management of Post-Traumatic Rupture of Thoracic Aorta, J. Thoracic Surgery, 35-347, 1958.
8. JAHNKE, E. J., Jr., FISHER, L. W., and JONES, R. C.: Acute Traumatic Rupture of Thoracic Aorta: Report of Six Consecutive Cases of Successful Early Repair, J. Thoracic Cardiov. Surg., 48:63, 1964.
9. STEINBERG, I.: Chronic Traumatic Aneurysm of the Thoracic Aorta: Report of Five Cases with a Plea for Conservative Treatment, New Eng. J. Med., 257:913, 1957.
10. STEINBERG, I.: Traumatic Aneurysm of the Thoracic Aorta: A Further Report, Amer. J. Roentgen., 91:1295, 1964.
11. COOLEY, D. A.: Discussion of Article by Stoney, R. J., Roe, B. B., and Redington, J. V.: Rupture of Thorac Aorta Due to Closed-Chest Trauma, Arch. Surg., 89:846, 1964.
12. DeBAKEY, M. E.: Discussion of Article by McBurney, R. P., and Vaughn, R. H.: Rupture of Thoracic Aorta Due to Non-Penetrating Trauma, Ann. Surg., 153:670, 1961.
13. GROVES, L. K.: Traumatic Aneurysms of the Thoracic Aorta, New Eng. J. Med., 270:220, 1964.
14. COOLEY, D. A., DeBAKEY, M. E., and MORRIS, G. C.: Controlled Extracoporeal Circulation in Surgical Treatment of Aortic Aneurysm, Ann. Surg., 146:473, 1957.
15. GERBODE, F. M., BRAIMBRIDGE, M., OSBORN, J. J., HOOD, M., and FRENCH, S.: Traumatic Thoracic Aneurysms: Treatment by Resection and Grafting with Use of Extracoporeal Bypass, Surgery 42:975, 1957.
16. NEVILLE, W. E., COX, W. D., LEININGER, B., and PIFARRE, R.: Resection of the Descending Thoracic Aorta with Femoral Vein to Femoral Artery Oxygenation Perfusion, J. Thoracic Cardiovasc. Surg., 56:39, 1968.
17. KIRSH, M. M., KAHN, D. R., CRANE, J. D., ANASTASIA, L. F., LUI, A. H., MOORES, W. Y., VATHAYANON, S., BOOKSTEIN, J. J., and SLOAN, H.: Repair of Acut Traumatic Rupture of the Aorta without Extracoporeal Circulation, Ann. Thoracic Surg., 10:227, 1970.
18. CRAWFORD, E. S., FENSTERMACHER, J. M., RICHARDSON, W., and SANDIFORD, F.: Reappraisal of Adjuncts to Avoid Ischmia in the Treatment of Thoracic Aortic Aneurysms, Surgery, 67:182, 1970.
19. ALLEY, R.: Discussion of a paper by Kirsh, M. M.: Repair of Acute Traumatic Rupture of the Aorta without Extracoporeal Circulation, Annals of Thoracic Surg., 10:277, 1970.
20. DUMANIAN, A. V., HOEKSEMA, T. D., SANTSCHI, D. R., GREENWALD, J. H., and FRAHM, C. J.: Profound Hypothermia and Circulatory Arrest in the Surgical Treatment of Traumatic Aneurysms of the Thoracic Aorta, J. of Thoracic Cardiocasc. Surg., 59:541, 1970.

TAKAYASU'S ARTERIES

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THREE CASES OF TAKAYASU'S ARTERITIS ARE REPORTED, TWO CASES OF THE AORTIC ARCH TYPE AND ONE CASE OF THE EXTENSIVE TYPE.

TWO PATIENTS HAVE UNDERGONE CORRECTIVE ARTERIAL SURGERY, AND ONE PATIENT IS CURRENTLY BEING TREATED WITH STEROIDS AND DOING WELL.

THE CLINICAL FEATURES OF TAKAYASU'S ARTERITIS ARE DISCUSSED.

Takayasu's arteritis, although more common in the Orient,[1-5] is relatively rare in the United States.[6-9] Recently, we have studied three cases of Takayasu's arteritis; two have undergone corrective arterial reconstructive surgery, and one is currently being treated medically with steroids.

The purpose of this paper is to report the clinical and laboratory findings in these three cases.

CASE REPORTS

Case I, L.H., GSH #111-851: A twenty-seven year old white female who was in good health until Jnuary 1968, when she developed a pleural effusion. She was seen again in August 1968, and the pleural effusion had recurred. Despite an extensive work-up, a definitive diagnosis was not established. A grade III/VI systolic ejection

murmur was heard in the second right intercostal space radiating to the neck. In December 1969, the patient developed weakness and aching of the upper extremities and postural syncopal episodes.

Physical examination: Pulses and blood pressures were unobtainable in both upper extremities. In the low extremities, the blood pressure was 164/100 mm. Hg. Apical pulse rate was 110/minute. Examination of the skin revealed a fine texture. Examination of the head and neck showed absent carotid pulses; a systolic thrill and a grade II/VI systolic bruit was heard over both carotid arteries. The funduscopic examination revealed arterioles of small caliber, and peripheral arterio-venous anastomosis were found. Examination of the heart revealed a grade II/VI systolic ejection murmur heard loudest at the second intercostal space at the right sternal border. The second heart sound was physiologically split. The first heart sound was within normal limits. A fourth heart sound was heard. The abdominal examination was unremarkable. Examination of the peripheral pulses revealed absent radial pulses bilaterally. The femoral and dorsalis artery pulses were palpable bilaterally and of good quality. The remainder of the physical examination was unremarkable. The electrocardiogram and chest x-ray were unremarkable.

The angiocardiograms showed extensive obstructive disease of the carotid, subclavian and vertebral arteries (Fig. 1). The patient underwent extensive corrective arterial surgery and, subsequently, has done well.

Case II, A.M., GSH #134-943: A twenty-three year old Spanish-American female, a field worker, was admitted in 1966 to this hospital with a two year history of blindness. She also complained of weakness and coldness of both upper extremities. The past history was unremarkable.

Physical examination: Pulses and blood pressures were unobtainable in both arms. A blood pressure of 155/90 mm. Hg. was obtained in both legs. The skin of the hands was cold. In the neck the left carotid pulse was faintly palpable, and the right carotid pulse was absent. Examination of the eyes revealed pupillary reflexes, and funduscopic examination was not possible because of cataract. The peripheral pulses in both lower extremities were good.

The patient underwent arteriograms which revealed occlusion of the innominate artery, a decreased lumen in the left carotid artery and complete occlusion of the left subclavian artery (Fig. 2). These findings were confirmed at operation. The innominate artery was described as "stony hard" and was completely occluded. The left subclavian artery was also occluded. An aortic-carotid artery bypass bilaterally was performed. An attempt was made to bypass the subclavian artery, but on inspection, it was felt to be too small and fibrotic for suitable bypass grafting.

Microscopic examination of the left carotid artery showed marked inflammatory reaction with lymphocytic infiltration and a few plasma cells extending throughout the entire thickness.

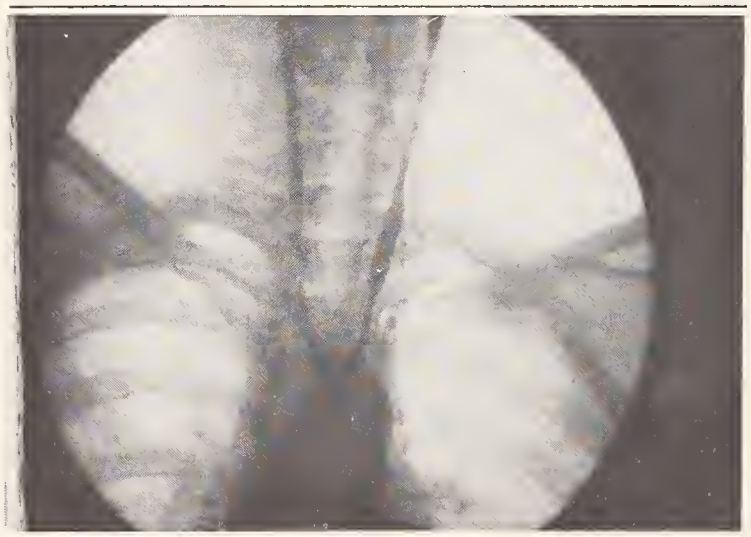


Figure 1:
Case I, L.H., 27F: The catheter was passed from the right femoral artery to the ascending aorta. A second catheter was passed from the right cubital vein to the pulmonary artery. The aortogram demonstrated stenosis and irregularity of the internal surface of the innominate artery and both carotid arteries. The right subclavian artery and the right vertebral artery are occluded; the left subclavian artery has a very small lumen; abundant collateral circulation is also seen.



Figure 2:
Case II, A.M., 23F: The catheter was passed from the right femoral artery to the ascending aorta. The aortogram demonstrated obliteration of the innominate artery, decreased lumen in the left carotid artery and occlusion of the left subclavian artery.

The lamina propria was intact. A few polymorphornuclea leukocytes were present. Examination of the aorta showed myxomatous degeneration and intimal proliferation associated with fibrosis. The elastic fibers were intact.

The patient has been followed in the outpatient clinic for six years. Despite cataract extractions, the patient remains blind. She still has problems with coldness of the hands and is restricted physically because of weakness of the upper extremities.

Case III, L.F., GSH #127-988: An eighteen year old Spanish-American female who presented complaining of intermittent episodes of dizziness and blurred vision. Occasionally these episodes were associated with severe right sided headaches. The past history was unremarkable.

Physical examination revealed a well-developed, well-nourished female in no distress. The radial pulse was weak in the left side and absent in the right side. Blood pressure was 128/90 mm. Hg. in the left arm but unobtainable in the right arm. A blood pressure of 156/90 mm. Hg. was obtained in both legs. In the neck, there was decreased pulsation in the right carotid artery, and a grade II/VI systolic bruit was felt over the left carotid artery. Funduscopic examination showed small tortuous arterioles, but there was no peripheral AV anastomosis. Examination of the heart and lungs was unremarkable. Abdominal examination revealed a grade II systolic bruit over the mid epigastric area (Fig. 3). The remainder of the physical examination was unremarkable.

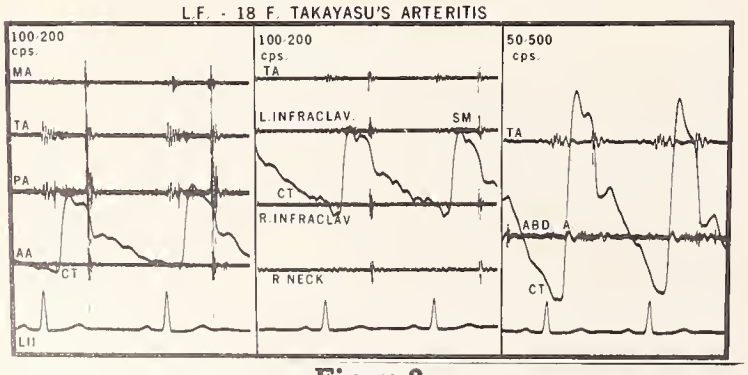


Figure 3:
Case III, L.F., 18F: Left: Phonocardiogram of the mitral area (MA), tricuspidal area (TA), pulmonary area (PA), aortic area (AA), carotid tracing (CT) and lead II of the electrocardiogram of Case III. A systolic ejection murmur is present in the tricuspid and pulmonary areas.
MIDDLE: Phonocardiogram of tht tricuspid area (TA), left infraclavicular area, right infraclavicular area and right side of the neck. Note the presence of systolic murmurs in both infraclavicular areas.
RIGHT: Phonocardiogram of the tricuspid area; another microphone was placed over the abdominal aorta. A systolic ejection murmur is present in the abdominal area recording.

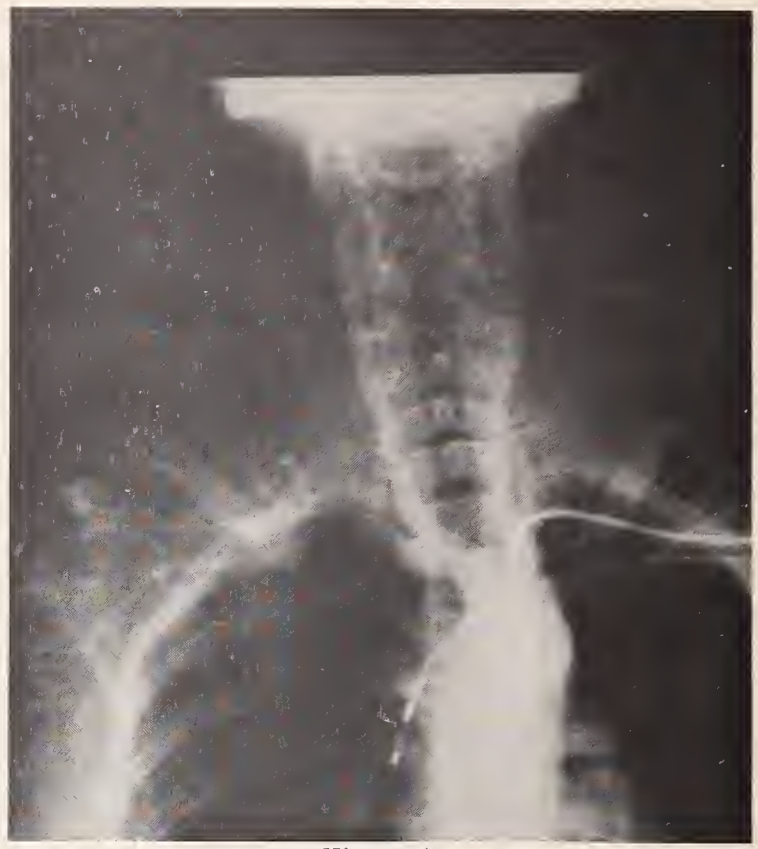


Figure 4:
Case III, L.F., 18F: The catheter was passed from the left brachial artery to the ascending aorta. Another catheter was passed from the left cubital vein to the superior vena cava. The aortogram demonstrates marked stenosis of the right subclavian artery with collateral circulation. The left subclavian artery is not well seen. Note the presence of abundant collateral circulation around the left subclavian artery.



Figure 5:
Case III, L.F., 18F: Aortogram demonstrating stenosis and irregularity of the internal surface of the abdominal aorta. The longitudinal diameter of the right kidney is approximately 3 cm. smaller than the left kidney. A stenosis of the right renal artery is seen.

The cineangiograms revealed complete occlusion of the right subclavian artery with collateral circulation. Both carotid and vertebral arteries were normally visualized. The abdominal aorta was narrowed distal to the renal arteries, and the right renal artery was small. The right kidney was about 3 cm. smaller than the left kidney (Figs. 4 and 5).

The patient was placed on corticosteroid therapy and is currently being followed in the outpatient clinic. After two months of steroid therapy, the sedimentation rate has decreased, and the patient has regained the right radial pulse. Blood pressure formerly unobtainable in the right arm was 114/96 mm. Hg., and the systolic pressure increased in the left arm from 128 to 142 mm. Hg. The pulse in the left radial artery has become stronger.

The laboratory results on the three patients are shown in Table I. Note the consistent high sedimentation rate in all three patients. In Case III, there was an elevation of the gamma globulin and IgG immunoproteins; moderate leucocytosis was found in Case II.

TABLE I

	Case I, L.H.	Case II, A.M.	Case III, L.F.
Sed. Rate	52	32	48
L.E. Prep.	–	Neg.	–
ANA	–	–	Neg.
VDRL	Neg.	Neg.	Neg.
WBC	8,500	12,700	5,900
Segs	59	75	41
Bands	5	2	26
Lymphs	29	21	23
Monos	–	1	9
Eos.	6	0	1
Hgb	13.3	13.2	12.6
Tsp	7.3 Gm%	–	7.1 Gm%
Alb	3.3 Gm%	–	3.35 Gm%
$Alpha_1$	0.51 Gm%	–	0.43 Gm%
$Alpha_2$	0.89 Gm%	–	1.06 Gm%
Beta	0.92 Gm%	–	1.13 Gm%
Gamma	1.60 Gm%	–	1.13 Gm%
CRP	Neg.	–	–
Immune Electr.	–	–	IgG 840 mg% IgA 185 mg% IgM 175 mg%

DISCUSSION

Takayasu's arteritis is relatively common in young females in the Orient.[1-5] (One of the authors, S. M., has experienced 26 cases with Takayasu's arteritis during the past seven years since 1962 in the First Department of Internal Medicine, Nagasaki University School of Medicine, JAPAN.)

This disease has been called "pulseless disease"[2, 3] or "aortic arch syndrome"[18] because some proximal segments of the branches of the aortic arch are frequently involved in this disease process.

Recently clinical and pathological findings of this disease have been better defined because of increased use of angiography and detailed postmortem studies.[4, 6, 11-13] Although this disease usually involved the arch of the aorta and its major branches, almost the entire aorta and its branches may be involved;[5, 11, 13] acquired coarctation of the descending thoracic and abdominal aorta, stenosis of the renal artery sometimes with hypertension, femoral and iliac artery, mesenteric artery, coronary artery, root of the aortic valve sometimes with aortic insufficiency may be present. Recently Nakao, Ikeda, et al[5] classified this disease into three types on the basis of angiographic and clinical findings.

1. **The arch type** consists of patients with involvement of the aortic arch and stenosis or occlusion, or both, of the proximal part of its branches.

2. **The extensive type** consists of severe and diffuse involvement of the entire aorta and its major branches.

3. **The descending thoracic and abdominal type** consists of patients with involvement of the descending thoracic and abdominal aorta and its major branches.

Cases I and II were classified as aortic arch type and Case III, the extensive type.

Symptoms and Physical Findings

Involvement of the carotid artery and vertebral artery may cause cerebral ischemic symptoms, such as dizziness, syncope on bending the head backward, headache and visual disturbance ranging from photopsia and blurring of vision to blindness. Ocular findings show the progressive formation of peripapillary arterio venous anastomosis and cataracts in some cases.[1, 3, 5] Hirose et al[14] have been successful in reproducing the eye lesions in experimental animals.

A systolic bruit in the neck vessels is heard in many cases due to stenosis of the carotid artery. Involvement of the subclavian artery may cause weakness of the radial pulse or its absence and decreased blood pressure in the arm.

There may be a systolic murmur over the abdominal aorta in cases involving the descending and abdominal aorta. Hypertension may be a feature when the renal arteries are involved.[5, 10, 13, 21]

Case III had a grade I/VI systolic murmur over the abdominal aorta, and the aortograms showed stenosis of the descending thoracic and abdominal aorta (Figs. 3 and 5). The right renal artery was stenosed, and the longitudinal diameter of the right kidney was about 3 cm. smaller than the left kidney; however, the patient was not hypertensive.

There have been only a few reports demonstrating stenosis of the femoral artery, stenosis of the coronary artery and aortic insufficiency due to invasion of the aortic root.[5, 11, 13] The systemic symptoms in this disease include malaise, fever and stiffness of the shoulders, particularly seen during the acute stage of the disease.

Laboratory Findings: Erythrocyte sedimentation rate and C-reactive protein are sensitive indicators of activity in this disease. Many cases show elevated erythrocyte sedimentation rate and positive C-reactive protein in the acute stage, later decreasing in the chronic stage. Moderate leukocytosis, increased gamma globulin, increased immunoglobulin G and positive Mantoux test are frequently present. In our three cases, all had moderately elevated erythrocyte sedimentation rate. One case had moderate leukocytosis, and one case had increased gamma globulin and IgG.

Etiology: Several genesis of this disease have been considered such as tuberculosis,[3] rheumatic disorders,[15, 16] syphilis,[17, 18] autoimmune mechanism,[5, 13, 19, 20] giant cell arteritis,[21] atherosclerosis,[22] congenital defects[12] and others.[16] The etiology, however, remains obscure.

Treatment: Corticosteroid therapy is recommended in the acute stage of this disease.[5, 7] Improved subjective symptoms, decreased erythrocyte sedimentation rate and C-reactive protein titers are seen in many cases treated with corticosteroids. Case III is currently being treated with corticosteroids and has shown a decreased erythrocyte sedimentation rate and has regained pulsation in the right radial artery. The use of salicyclic acid and chloroquine have been tried during the acute stage, but they are not as effective as steroids. Anticoagulants are recommended during the chronic stage. Surgical treatment is recommended in cases with severe ischemic symptoms of the involved organ.

Although this disease is relatively rare in this country, young females with weak radial pulses, murmurs at the neck sometimes associated with cerebral ischemic symptoms, visual disturbances and hypertension of the leg should have aortograms to establish the diagnosis.

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REFERENCES

1. Takayasu, M.: Case with unusual changes of the central vessels in the retina. Acta. Soc. Ophth, Jap. 12:554, 1908.
2. Shimizu, K. and Sano K.: Pulseless disease. Clin. Surg. 3:377, 1948.
3. Shimizu, K., and Sano, K.: Pulseless disease. J. Neuropath. Clin. Neurol. 1:37, 1951.
4. Nasu, T.: Pathology of pulseless disease. A systematic study and critical review of twenty-one autopsy cases reported in Japan. Angiology 14:225-242, 1963.
5. Nakao, K., Ikeda, M., Kimata, S., et al.: Takayasu's arteritis. Clinical report of eighty-four cases and immunological studies of seven cases. Circulation 35:1141-1155, 1967.
6. Caccamise, W. C. and Whitman, J. F.: Pulseless disease. A preliminary case report. Amer. Heart J. 44:629-633, 1952.
7. Gibbons, T. B. and King, R. L.: Obliterative brachiocephalic arteritis. Pulseless disease of Takayasu. Circulation 15: 845-849, 1957.
8. Koszewski, B. J. and Hubbard, T. F.: Pulseless disease due to brachial arteritis. Circulation 16: 406-410, 1957.
9. Mengis, C. L., Dubilier, W. and Barry, K. G.: The aortic arch syndrome of Takayasu. Amer. Heart J. 55:435-442, 1958.
10. Ask-Upmark, E.: On the pathogenesis of the hypertension in Takayasu's syndrome. Acta. Med. Scand. 169:467-477, 1961.
11. Vinijchaikul, K.: Primary arteritis of the aorta and its main branches (Takayasu's arteriopathy). A clinicopathologic autopsy study of eight cases. Amer. J. Med. 43:15-27, 1967.
12. Cardwell, R. A. and Skipper, E. W.: Pulseless disease. A report on five cases. Brit. Heart J. 23:53-65, 1961.
13. Marquis, Y., Richardson, J. B., Ritchie, A. C., et al.: Idiopathic medial aortopathy and arteriopathy. Amer. J. Med. 44:939-954, 1968.
14. Hirose. K. and Baba, K.: A study of Takayasu-Ohnishi's (pulseless) disease. Change of the eye and brain of the rabbit produced by injection of minute hair fragment suspension into the common carotid artery. Amer. J. Ophthal. 55:554-568, 1963.
15. Falicov, R. E. and Cooney, D. F.: Takayasu's arteritis and rheumatoid arthritis: a case report. Arch. Int. Med. 114:594-600, 1964.
16. Munoz, N. and Correa, P.: Arteritis of the aorta and its major branches. Amer. Heart J. 80:319-328, 1970.
17. Segal, F. and Berezowski, A.: Aortic arch syndrome. Amer. Heart J. 55:443-449, 1958.
18. Ross, R. S. and McKusik, V. A.: Aortic arch syndrome: Diminished or absent pulses in arteries arising from the arch of the aorta. Arch. Int. Med. 92:701-740, 1953.
19. Judge, R. D., Currier, R. D., Gracie, W. A., et al.: Takayasu's arteritis and the aortic arch syndrome. Amer. J. Med. 32:379-392, 1962.
20. Miller, G. A., Thomas. M. L. and Medd. W. E.: Aortic arch syndrome and polymyositis with L. E. cells in peripheral blood. Brit. Med. J. 5280:771-772, 1962.
21. Danaraj, T. J., Wong, H. O. and Thomas, M. A.: Primary artritis of aorta causing renal artery stenosis and hypertension. Brit. Heart J. 25:153-165, 1963.
22. Thurlbeck. W. M. and Currens, J. H.: The aortic arch syndrome (pulseless disease). Report of ten cases with three autopsies. Circulation 19:499-510, 1959.



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THE NIXON ADMINISTRATION'S HEALTH PROGRAM

Recently President Nixon unveiled his administration's health program in a 19-page message to Congress supported by three legislative recommendations. A.M.A.'s president, Walter C. Bornemeier, M.D. commented that the White House has "come up essentially with statesmanlike, forward-looking proposals." The Nixon approach is obviously closer to that of Medicredit (AMA) and Ameriplan (AHA) than the proposals of Senator Kennedy and other leftists. The President has faith in the private health insurance industry, the medical profession and hospital administrations. The Kennedy plan would replace private health insurance with coverage underwritten and administered by the Federal Government—following the pattern in socialized countries.

The Administration's Program:

1) Virtually everyone is covered by private health insurance, except, the self-employed, employees of state and local government, domestics, part-time and seasonal workers who would be protected by a separate Family Insurance Plan. The program would begin July 1, 1973.

2) Health Maintenance Organizations (H.M.O.) are endorsed and funded.

3) Three-year extension of health manpower legislation would be provided for medical students, medical schools, low-income and minority students, and physician assistants.

4) Merger of the voluntary Part B program of Medicare (physician's fees) with Part A which covers hospital services and other reorganization of Medicare is provided.

5) One hundred million dollars for cancer research in the coming fiscal year and new research in sickle cell anemia are called for.

6) A Commission on Medical Malpractice is being ordered to report "Specific recommendations for dealing with this problem" by March 1, 1972.

Your editor is of the opinion that the medical profession, the hospital associations, and the insurance industry should back the Nixon health program as individuals—forgetting their organizational identities. This would serve the public interest, maintain quality medicine, provide for the needy, and bolster the private enterprise system and free economy of the United States. To do otherwise will open the floodgates to nationalization of this country. Accordingly all of our patients and all citizens should be informed of these issues and options in a positive manner.

John R. Green, M.D.

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President's Page

"The shaft of the arrow had been feathered with one of the eagles own plumes. We often give our enemies the means of our own destruction." (Aesop)

Many of us by education and training are accustomed to making decisions on a one to one basis. This orientation to problem solving carries over in many of our endeavors. Certainly we hurt our profession and the objectives of our association when we become divided in purpose and direction. It is my hope that during this year we can discuss freely the policies and programs of our association, and once a majority decision is made, work as one to implement that mandate. Now as never before we need to be united as a team in the activities and programs of our Association.

Our future is being determined now. To quote Galsworth "If you do not think about the future you can not have one." In my presidential address I proposed the creation of an Ad Hoc committee of the Board of Directors whose charge was to study, evaluate and propose means by which the state association and its constituent county societies could work together in a more harmonious and productive manner. This committee's recommendations will help us to a better understanding of local and state problems. It will then be up to you and me to work together to make our Association and our profession a productive and contributing force in directing and providing health care to the people of Arizona.

James L. Grobe, M.D., President



Dean's Page

AN INTERDISCIPLINARY PROGRAM FOR INFECTIOUS DISEASES

The subject of infectious diseases at the College of Medicine is being handled as an interdisciplinary program of the Departments of Medicine, Pediatrics and Microbiology. Ward rounds and patient-oriented conferences are conducted jointly by the clinical departments with participation in teaching sessions by students, residents, fellows and other physicians.

Clearly, these arrangements are highly advantageous to the entire health team and to the patients, since the combined infectious disease resources of the Medical Center are immediately available for his care regardless of where these varied resources reside.

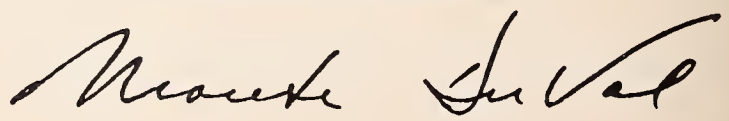
For the medical student and house staff, the program insures that the prevention and treatment of infectious diseases are taught as a continuum rather than as diseases in adults on the one hand and diseases in children on the other, or as medical laboratory microbiology separated from clinical infectious diseases. The varying manifestations of the same infection in differing age groups and in different individuals can then be appreciated as can the movement of infectious diseases through family units, peer groups and even hospitals. This approach also provides a realistic understanding of the laboratories' role in assisting in the diagnosis and treatment of infectious diseases. In addition it permits the student and trainee to perceive the types and extent of changes in the patterns of infectious diseases which are being produced by the ever-increasing application of immunizing agents and therapeutic agents. The infectious diseases which will be seen in adults tomorrow may be significantly altered by the newer vaccines being used in children today.

A clinical Immunology group is already identified and will present an elective program for medical and graduate students. This group has already participated in the evaluation of several patients with complex problems, each member lending his clinical or laboratory skills to the solution or definition of the patients' problem. Similarly, a Clinical Virology Group is emerging with the same basic premise. An additional feature of such joint activities is the blending of old and new knowledge. As the horizons of infectious disease research expand, there is practically instantaneous communication to the medical and graduate student. One can then revise or mold older knowledge with information that is more current.

For the practicing physician this structure will provide postgraduate education programs in infectious diseases which will be varied, broadly-based and comprehensive. An example of this is the three-day course entitled "Recent Advances in the Immunoprophylaxis and Chemotherapy of Infectious Diseases" which was presented here early in February. The course dealt with newer areas of infectious diseases, immunization procedures, antimicrobial agents and methods of laboratory diagnosis. The joint sponsorship of the course, by the American College of Physisians and the American Academy of Pediatrics, was itself unique and was a response to the philosophy and organization of infectious diseases in the College of Medicine. The course was attended by almost 200 physicians from 44 states, Puerto Rico and Canada. Fortunately, the weather cooperated and reinforced this state's reputation as America's winter haven.

For the future development of medical knowledge this means that multiphasic programs for acquiring and applying new information can readily be developed. As an example, members of the College of Medicine faculty are beginning to meet with interested physicians, biologists, microbiologists and public health workers to explore new avenues for the control of coccidioidomycosis. Methods for eradication of the organism from the soil, the reasons for the uniquely high evidence of dissemination in certain races, and the development of improved antifungal therapy are areas which will receive priority attention.

The interdisciplinary infectious diseases program is one of the new approaches to health teaching and health care being developed at the College of Medicine. The progress of this program will be watched with interest.



Topics Of Current Medical Interest

ARBITRATION OF MALPRACTICE CLAIMS

Stop thinking about malpractice in terms of a claim by an individual patient against an individual doctor! It does not work that way:

(1) The doctor is almost always insured: the patient's claim is against a fund created by other patients' contributions.

(2) In most situations, the doctor is acting as part of a medical team, including specialists, nurses, technicians, complex equipment, drugs and techniques. The hospital has become the major outlet for services involving serious medical problems, and is becoming the center for increasing amounts of outpatient care. In short, other parties are involved.

(3) The patients' bills are generally paid by medical insurance or by some government program. Again, other entities have an interest.

The entire health service complex has to be involved if an optimum system is to be devised for compensating patients who are injured as a result of harmful medical treatment. It is not simply the medical profession that is concerned.

In an article entitled **The Doctor's New Dilemma — "Will I Be Sued"?,** Dr. Michael J. Halberstam looks at medical malpractice as a professional problem. He recommends "better communications among regulating groups, more effective sanctions and continual recertifications of competence." He rejects suggestions that structural change may be required. "Neither Government reinsurance nor a nationwide malpractice blanket by a private insurer would really affect the prevalence of suits and the erratic way they affect medical care."

For Dr. Halberstam, it may be possible to wait until the medical profession eliminates the malpractice problem through self-regulation. As he admits, "internal medicine has been less plagued by lawsuits than surgery and its subspecialties." Other physicians, in high risk specialties, may cry more urgently for reform. Hospitals and insurance companies are also looking around for a better and less expensive way to handle the malpractice problem. Nor is the public satisfied with its present remedies.

As a general rule, the cost and delays of litigation are carefully avoided. The civil courts in most communities are starved for funds and facilities. An overwhelming tide of criminal business has monopolized the attention of judges and

court administrators. Ordinary civil cases are often lost in the shuffle.

Personal injury negligence claims often find themselves stacked up on long delayed calendars. The parties are pressured into an atmosphere of forced settlement. In many jurisdictions, it may take several years for a medical malpractice case to come to trial.

At the same time, the trial of such lawsuits has lengthened. Even in a relatively minor case, extensive depositions are necessary before the matter comes on for a hearing in court. For every litigant these preliminary steps in the litigation process are expensive and frustrating. For the doctor, this kind of activity can be devastating; it takes him away from his vital, professional practice. There are already too few physicians: it seems irresponsible to dissipate the meager supply.

A medical malpractice case is almost guaranteed to shake the doctor's plum tree. Physicians are sensitive to the gossip within the medical community and among patients. The natural anxiety of patients makes for a fertile ground. Information about malpractice claims flourishes on the grapevine. Gossip can hurt a doctor. There is good reason why both doctors and hospitals would like to resolve malpractice claims promptly and outside of court.

An experimental program sponsored by the California Hospital Association and the Californit Medical Association in ten hospitals in Southern California represents an attempt by the health service community to solve this problem. A patient who enters one of these hospitals is asked to sign an agreement to arbitrate any disputes that may arise between him and the hospital or its medical staff. Patients seem to find this option agreeable. When medical malpractice claims are filed against these hospitals, they can now be handled promptly and economically through arbitration. The arbitration regulations adopted by these hospitals bring all medical personnel involved in the treatment into the same arbitration procedure. The entire matter can be disposed of in one proceeding. There will be a final and binding decision by a panel of arbitrators, allocating responsibility between the various participants. The arbitrators will be persons with knowledge and experience. Arbitrators will be selected from lists submitted by the American Arbitration Association.

Almost everything about the arbitration process is calculated to appeal to a doctor or to a busy hospital administrator.

It is a simple procedure, usually requiring only a single hearing. It is carried out in the privacy of a hearing room. The evidence does not become a matter of public record. The legal expenses are generally less than they would have been in court. But most of all, the agony and embarrassment suffered in court is substantially reduced in the more businesslike atmosphere of the arbitration chamber. No wonder doctors prefer to have their behavior determined in this way.

If medical service becomes a secured right, paid for by national health insurance, there is some possibility that "no-fault" coverage would be provided for medical service-related injuries. The Hospital Arbitration Regulations now in effect in California require a claimant to prove legal negligence, exactly as in court. If the law should be changed to eliminate "fault," it may be even more important for hospitals, doctors and insurance carriers to have a mechanism that will assign responsibility for the injury. These organizations are in a position to offer the public a modern, impartial procedure. They have a good business reason to look for better ways to determine whether, and in what amount, the victims of medical service related injuries should be reimbursed.

Arbitration has deep roots in the past. Now it has become a modern subject. It is on today's agenda because, when traditional methods of resolving controversy fail, industry leaders begin to look for a better way. Arbitration comes to mind because it is simple and flexible.

The costs and anxieties of medical malpractice litigation worry physicians. Their fear may be having a morbid effect upon medical service. Hospitals are particularly worried about costs. Settlements are forcing insurance carriers to increase premiums, or to abandon substantial parts of the market. All of this comes at a time when the entire medical service community is being swept by the winds of change.

The California Hospital Arbitration Program was carefully designed to accommodate contemporary problems and changing medical relationships. I recommend to you that this arbitration system be studied by hospital administrators, by doctors and by lawyers, as a signpost towards the future.

MEDICAL-TECHNICAL MARATHON

From Reno, Nevada to Meridian, Mississippi; from Harlingen, Texas to Minot, North Dakota; a team of physicians and technologists logged thousands of miles in air travel recently to provide an added safety factor for the patient who needs a blood transfusion. Their assignment was to institute an additional processing test in the community blood banks directed by Blood Services of Scottsdale, Arizona.

The test, a method of screening blood donors for Hepatitis Associated Antigen (HAA), or Australia Antigen, is done by counterelectrophoresis (separation of protein in an electrical field). This is a high-precision system and is regarded as one of the most reliable tests available at the present time for routine use.

Initiating the procedure in the bloodbanks in Lubbock, Texas and Albuquerque, New Mexico in February, Blood Services Medical Director Doctor Peter V. Van Schoonhoven reported that a number of similar test procedures had been under investigation at the Quality Control Laboratory in Scottsdale for many months before the present method was approved for use in all of the blood banks in the system.

A sample of the donor's blood is placed in a well on a specially-designed agarose film and the reagent material is placed in a companion well.

As many as 30 samples may be tested by counterelectrophoresis on each film, which is placed in an electrical chamber for 35 minutes (after a 15-minute absorption period) and then viewed over indirect fluorescent light to observe the result. A reactive (positive) test is indicated by a precipitin line between the two wells.

Extreme care is also taken in the blood bank's laboratory to sterilize all test materials and positive units of blood to avoid any possible contamination to the city sewage system.

During a television interview by Newscaster Max Smith (KOOL-CBS, Phoenix), Dr. Van Schoonhoven discussed the procedure:

"Part of the problem, and one which will continue to be a problem, is the availability of dependable reagent material. We have been working closely with the Center for Disease Control research staff for several months and preliminary results are very encouraging.

"A particularly disturbing facet is the physicians and health workers of all kinds who may be hepatitis carriers. Recent studies indicate that serum hepatitis, a disease long thought to be transferred only by introducing the agent beneath the skin by needle, now is being transmitted directly from person to person in several ways. Australia antigen's discoverer, Dr. Baruch S. Blumberg, has already publicly called for tests for all food handlers.

"Blood banks performing the test screen each one of their own workers, and when they find someone who seems to be a carrier he is reassigned to an area where the possibility of transmitting the disease is minimal.

"About 1 to 10 persons in a thousand will be found to react positively to the test (there is a geographic difference in the occurrence of the disease), and on the basis of preliminary cost projections of slightly more than a dollar for each test, it will cost the blood bank, on the average, several hundred dollars to eliminate one potential virus carrier from its panel of blood donors.

"We do have an additional measure which we have relied upon for many years, and that is a Disqualified Donor Directory. Containing the name, birth date, sex, race, social security number, reason for disqualification, and location of

disqualifying facility, the directory is up-dated periodically, published, and distributed to all Blood Service facilities.

"Reasons for disqualification are varied, but our principal effort is to exclude any individuals who have a history of viral hepatitis, involvement in a case of post-transfusion hepatitis, close exposure to a person known to have hepatitis. Drug addicts are, of course, medically unacceptable, as are individuals with malaria, diabetes, and other physical conditions which make, or could make, giving blood hazardous for themselves or for the patient who might receive the blood."

Notifying the individual that his test was found to be positive presents another problem, and the procedure was explained by Dr. Frank D. Mann, medical director of the Blood Services facility in Phoenix:

"Each reactive (positive) test results in the donor being sent a letter instructing him not to give blood, since it would be possible for him to be in perfectly good health and yet be responsible for transmitting the virus to a patient. We endeavor not to alarm the individual, since infections of the virus in such persons are usually very mild and often produce no symptoms at all.

"We do feel that his physician should be notified of our findings, however, and we request that he take the letter to his physician so that the test results can be included in his medical record."

In addition to conducting the training procedure in Albuquerque and Lubbock, Dr. Van Schoonhoven visited the Blood Services facilities in El Paso, Texas and Fort Smith and Little Rock, Arkansas. Vice President for Medical Affairs Doctor John B. Alsever conducted the training procedure in Phoenix and Mesa, Arizona and Reno and Las Vegas, Nevada. Technical Director Hayle B. Randolph's responsibilities were the blood banks located in Jackson and Meridian, Mississippi; Lafayette and New Orleans, Louisiana; and Houston, Texas. Don R. Eitel, director of quality control for Blood Services, drew the northern assignment and traveled to Cheyenne, Wyoming; Billings, Montana; Rapid City, South Dakota; and Fargo and Minot in North Dakota.

Blood services is the largest medically-sponsored, self-sustaining nonprofit blood banking organization in the world, and was last year honored by the Newcomen Society in North America.

In Memoriam



JOHN STANLEY, M.D.

"Reguiem aeternum dona eis, Domine: et lux perpetua luceat eis." Ps. 64, 2-3

JOHN F. STANLEY, M.D., BORN April 2, 1908: DIED January 20, 1971.

John, beloved friend, skillful and cherished colleague, knowledgeable and kind humanitarian, was taken from us suddenly on January 20, 1971, while he was playing in a golf tournament at the Yuma Golf and County Club.

All of his colleagues, and I, especially, were shocked and deeply grieved by his death. It has deprived our community of a fine, skilled, dedicated doctor and a real humanitarian. He was truly a rarity in medical circles—beloved and respected by all. I know of no person who did not like this cheerful, hard-working, dedicated man. He had a dry, fine sense of humor; and above all, a deep sense of loyalty to his patients and friends—hundreds of whom crowded St. Paul's Episcopal Church to overflowing during the funeral services on January 23, 1971. There were few dry eyes and faces on that sad morning.

Doctor John Stanley was born in Yuma, Arizona on April 2, 1908, a third generation Yuman. Being a native-born doctor is another rare fact is medicine in our part of the state. His maternal grandfather, John W. Jones, was assigned to Fort Yuma in 1863 with the Union Army. His paternal grandfather, John Stanley, settled in Yuma about 1880. Saragosa Frank Stanley was his father; he was municipal court judge and city recorder for 18 years, first being elected in 1910.

His education began in the Yuma City Schools and Yuma High School. He received his Bac-

calaureate degree in 1930 from the University of Arizona at Tucson; he attended the Medical School of the University of Kansas, and received his M. D. degree in 1935. He served his internship at the San Diego County Hospital in 1935 and 1936. Then he returned to Yuma to practice in association with Dr. Chester Wilson (deceased). This was just a few months before I came to the Yuma area and started a long, pleasant, fruitful and rewarding friendship with John.

Early in World War II he began his military service and he served with distinction. Upon his return in 1945, I had the pleasure of having John share my office and work with me, until his own office was completed for his long-planned resumption of association with Charles Powell, M.D. They practiced together for a long time in pleasant harmony. Upon Dr. Powell's recent semi-retirement, he practiced in association with William Lyle, M.D. and Jeanne Johnson, M.D.

His professional activities consisted of membership in the Yuma County Medical Society, Arizona Medical Association, American Medical Association and in the American Academy of General Practice. He has, on many occasions, served as President of the Yuma County Medical Society, Delegate to the Arizona Medical Association, Chairman of the Staffs of the Yuma County Hospital and of the Parkview Baptist Hospital. He diligently worked on many committees.

He also was a member of the Eastern Star, Yuma Masonic Lodge F and AM, BPO Elks Lodgs 476, American Legion and of the St. Paul's Episcopal Church.

He is survived by his wife, Marian, a son, Douglas, an attorney practicing in Yuma, a daughter, Pamela Ross of Salinas, California, and four grandchildren.

My good friend, John — you will be sorely missed. There is so much skilled and humanitarian work yet to be done; so much kindness, brightness and cheer to spread; so many books and journals yet to be read; and so much more beautiful music to be heard. John Ruskin wrote, "The highest reward for a man's toil, is not what he gets for it, but what he becomes by it." You shall always remain warm in our memory. You have given us something to enrich our existence. Loss must be followed by restitution in some way, and we must do all for you which you can no longer do. You will be another impetus to our work and a spur to our conscience and compassion.

"The righteous need no monuments; for their good deeds are their memorials." (Talmud)

Our Creator and Father, Author of life and death, keep in Thy loving care the soul of our departed John who has been called back unto Thee. Shelter his soul in Thy presence for with Thee is eternal life. Remember all the goodness which he wrought in his lifetime. Bestow upon him the bliss that is treasured up for the righteous in the world to come.

CLYDE J. BARKER, M.D.

Clyde J. Barker was born in Buffalo, Indiana on March 28, 1879. While still a babe, his family moved to Kansas and he was raised on his father's farm. After graduating from Ottawa University, he studied at the University of Louisville, where he received his M.D. degree in 1905.

While passing through the small town of Kaw City, Oklahoma, which was then Indiana Territory, he found that the town was without the services of their only doctor. It seems the doctor had shot a man and would be gone for a while. Dr. Barker decided to stay and hung out his shingle. His accounting ledgers showed a 50c fee for office calls and $1.00 fee for home calls. He remained in Kaw City for about twenty-six years and raised his family there.

During the Depression in the Thirties he joined the Civilian Conservation Corps and served with them about ten years. Upon the discontinuation of the CCC and with World War II in the wind, he made an effort to join the Army, but was turned down because of a supposed aortic aneurysm. He was then sixty years old.

He joined his son who was practicing in Phoenix in January, and in April took over the entire practice when his son left for the Army. It was quite a change from small town medicine, and he often had to deliver thirty babies a month. This was also his first experience at delivering a baby in the hospital.

When both his sons returned to practice medicine, Dr. Barker remained with them and kept his active practice, finally retiring at the age of eighty-five. It is evident that they "don't make them like they used to."

He was sharp as a tack and retained his mental capabilities until the end. He died suddenly like all us doctors wish we will be able to do and ended a full and useful life.



DAVID ISAAC ARNOW, M.D.

For a quarter of a century, David Isaac Arnow, lived and practiced medicine in Arizona. Amsterdam, Holland was his birthplace on November 2, 1908. His family moved to America and his education continued; premedical work at the University of South Dakota and at the University of California in San Francisco; his M.D. degree in 1940 at the University of California, and his internship at Mt. Zion Hospital both in San Francisco. Only one year residency at San Joaquin County Hospital was possible as the military Medical Corps occupied the subsequent four years during the war. In 1945 he entered General Practice and Obstetrics in Chandler where he was also the County Physician for Mesa and Chandler.

A desire for knowledge in the Allergic Diseases led him into advanced study in 1953 at the Kaiser Foundation Allergic Clinic and into post graduate courses over the next six years given by the American College of Allergists. With this training he was qualified for and became a Fellow of the American College of Allergists and a member of the American Academy of Allergists. His office and practice moved to Phoenix where he attended the Allergy Clinic at the Veteran's Administration Hospital in Phoenix as a consultant in Allergy. The school of nursing at Good Samaritan Hospital benefited from his lectures where he was an instructor in Allergic Diseases.

Memberships had been held in the California State Allergy Society, Arizona State Allergy Society, Arizona Academy of Sciences, Maricopa County Medical Society, The Arizona Medical Association and Phi Delta Epsilon.

He contributed considerable time and effort to the Roosevelt Council of the Boy Scouts of America, not only as chairman of the Camelback District Health and Safety Committee (1955-1957) but as a physician who did many yearly health and safety examinations for the Boy Scouts prior to their camp.

He was also a member of the Century Country Club and of the Beth Israel Congregation. His proweress as an athlete in soccer was recognized when he recently was elevated to the University of San Francisco Athletic Hall of Fame.

Surviving him are his wife Edith, a son Paul M. who is attending the University of California School of Medicine in San Francisco, a daughter Mrs. Kenneth Gerst of Ann Arbor, Michigan, a grand-daughter, and a sister in San Francisco.

A devoted physician, husband and father whose gentility and concern for others were outstanding attributes. Success was his but he had not attained the top rung of the ladder when life left him, too soon, on December 13, 1970. He will be remembered and missed.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

AD HOC COMMITTEE ON OCCUPATIONAL HEALTH

The meeting of the Ad Hoc Committee on Occupational Health of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, February 8, 1971, convened at 7:12 p.m., Eugene J. Ryan, M.D., Chairman presiding.

RESOLUTION ESTABLISHING COMMITTEE

The Resolution prepared by the Articles of Incorporation and Bylaws Committee setting up a standing committee was reviewed and received for information.

MEMBERSHIP CONFIRMATION

The committee noted that George L. Cannon, M.D., was approved for appointment by the Board of Directors.

PEER REVIEW

The subject of providing a "Peer Review Section" to ICA was discussed in detail.

IT WAS MOVED AND CARRIED THAT THE CHAIRMAN WOULD APPOINT A SECTION ON PEER REVIEW FOR THE ICA.

WORKMAN'S COMPENSATION FUND

Dr. Ryan reported on the recent meeting of physicians with staff representatives of the Workman's Compensation Fund indicating that it was most helpful to a better understanding of the mutual problems. He also indicated a need for additional meetings of this type.

ANESTHESIOLOGISTS

The letter of 1/12/71 from Bruce E. Thoeny, Chair-

man, ICA, whieh reads as follows was discussed.

"This letter is direeted to you to bring you up-to-date as to the fact that there are three anesthesiologist groups who have, in effect, notified us in writing that they will no longer do any Industrial Commission cases except on an emergeney basis, or in some eases, on an elective basis. As you know, the Industrial Commission sets the Medical Fee Schedule for all Industrial Commission cases, and whereas we have just inereased our Schedule, these anesthesiologists feel that we did not inerease it up to what they demand, whieh is a conversion factor of 8 on their national sehedule.

"It is felt you should be made aware of a problem that eould become very critieal to the entire State of Arizona, the injured workman, and since you represent the Arizona Medieal Association, the physicians who practice in the State of Arizona, you should be apprised of any situation that may arise or conceivably eould blow up at some future date, so that if there is anything possible that you could do to alleviate this problem, you will have time to take care of it.

"There are many other ramifications of this action by these some 20 anesthesiologists, and if at your eonvenience you would like me to eall you, I would be more than happy to go over the many other problems that could be encountered by such an action at this time."

Following extensive discussion:

IT WAS MOVED AND CARRIED THAT THIS LETTER BE REFERRED TO THE ARIZONA SOCIETY OF ANESTHESIOLOGISTS FOR THEIR RECOMMENDATIONS.

COORDINATED DISABILITY EVALUATION PROGRAM

The broad subject of a Coordinated Disability Evaluation Program was brought up by Dr. Ryan who introdueed Dr. John Young of the Good Samaritan Hospital Rehabilitation Center. Dr. Young reported on the feasibility, advisability and practieally of instituting a program where all parties involved in the eare and/or potential eare of disability patients ean get together early to work out an early treatment program.

Dr. Young indicated that even when all parties were properly paid for the time spent in planning for this patient, the long term results would more than offset the initial costs.

Dr. Young related the devastating things that oeeur to the marginal patient whose program is not promptly and completely planned.

The best programs are those that have well controlled medical management starting at the time the disability first occurs.

Dr. Edwards related the variety of ways that this matter is handled by the various insurance companies indieating there is no standardization among the companies.

It was pointed out that at present "group eonsultants" are at the wrong end of the treatment proeedure. It was also indicated "group consultation" or "eommittee medicine" is not neeessarily good medicine. That what is needed is a single physieian to follow and manage the patient from the start. It was pointed out that the greatest hurdle to goal is the expense of compensating the physician for the time spent in eounseling the patient.

Dr. Tuehler pointed out that one step would be to have some of the eo-ordination done by other than physieians, i.e., soeial workers, etc.

It was noted that part of the problem lies in the physician not understanding the proper use of the fee schedules.

Dr. Ryan indicated that a struetured organization could be established whieh would have to be sold to the various insurance eompanies. It was noted that such an organization could be set up by the Arizona Medical Assoeiation Foundation.

Dr. Young offered to assist the eommittee in any way he eould in the future.

IT WAS DETERMINED THAT THE NEXT STEP SHOULD BE TO CONTACT MEDICAL DIRECTORS OF ALL CARRIERS AND ARRANGE TO PRESENT THE CONCEPT OF A COORDINATED DISABILITY EVALUATION PROGRAM TO GET THEIR REACTION.

OTHER BUSINESS

The matter of having the members bill the insurance earriers on the usual, customary and reasonable basis was discussed. It was noted that earriers are returning billings submitted this way. It was also noted that at the last time the ICA fees were increased they also indicated that physicians were to bill on the basis of the fee schedule.

IT WAS MOVED AND CARRIED THAT THE MEMBERS SHOULD BE ADVISED TO BILL ON THE BASIS OF THE SCHEDULE INSTEAD OF USUAL, CUSTOMARY AND REASONABLE.

Meeting adjourned 9:29 p.m.

Edward Sattenspiel, M.D.
Secretary
Bruee E. Robinson
Executive Direetor

GOVERNMENTAL SERVICES COMMITTEE

The meeting of the Governmental Services Committee of the Arizona Medieal Association, Inc., held Saturday, Mareh 6, 1971, at 810 West Bethany Home Road, Phoenix, Arizona, convened at 1:25 p.m., John P. Heileman, M.D., Chairman, presiding.

MINUTES

Minutes of the meeting held Oetober 17, 1970, were approved as distributed.

PART A — INTERMEDIARY — ARIZONA BLUE SHIELD

Hospitals vs Extended Care Facilities

Dr. Heileman reviewed Dr. William R. Myer's letter of 12/26/70 dealing with the problems relating to transferring patients from hospitals to ECF's on weekends. He noted that such transfers are diffieult to obtain due to procedures at the hospitals and ECFs. He also related that this often results in unneeessary eosts.

IT WAS RECOMMENDED THAT WHEN A FEDERALLY ESTABLISHED PEER REVIEW PROGRAM IS ESTABLISHED TO PROVIDE OVER INSTITUTIONS, AS WELL AS PHYSICIANS, THAT THIS MATTER SHOULD BE THOROUGHLY REVIEWED.

General Status Report

Paul H. Koren, M.D., Medical and Professional Relations Director of the Arizona Blue Cross-Blue Shield, briefly reported on his work with the Section of Uti-

lization Review which is progressing gradually toward the establishment of a set of UR guidelines. Dr. Koren also reported that the number of ECFs who are participating in Medicare are gradually declining. At present there are sixteen.

PART B — INTERMEDIARY — AETNA LIFE & CASUALTY CO.

Aetna Releases #39—Nursing Home Visits

The various letters and communications relating to the above release by Aetna were reviewed in-depth. The release reads as follows:

"New regulations require carriers to assume that a visit by a physician to a nursing home involves services to several patients. In applying this concept, a lower charge will generally be allowed unless the billing form clearly indicates that only one patient was seen.

"Whenever services are rendered to only one patient in a nursing home, it is recommended that the phrase 'only patient seen' be used on the billing form, or in item 7C of Medicare Claim Form 1490. This will assure an equitable reasonable charge determination. Failure to supply this information will result in a lower claim payment."

Dr. Heileman pointed out that the Section on Medical Review had considered this matter and made the following recommendation: "It is the recommendation of the Section on Medical Review that the Governmental Services Committee Review the release and consider a resolution to the House of Delegates of this Association instructing the American Medical Association and the Bureau of Health Insurance, that regulations of this nature are aimed at only a very small portion of the practicing physicians, and that abuse can be handled by local Peer Review Committees instead of broad regulations."

IT WAS MOVED AND CARRIED THAT THIS COMMITTEE RECOMMEND TO THE BOARD OF DIRECTORS THAT A RESOLUTION BE PREPARED FOR SUBMITTAL T OTHE HOUSE OF DELEGATES ALONG THE LINES OUTLINED IN THE STATEMENT QUOTED IMMEDIATELY ABOVE.

Assignments

The flyer from the Louisiana State Medical Society urging physicians not to accept assignments was received for information.

General Status Report

James J. Blazek, Administrator, Medical Claim Department, Aetna Life Insurance Company, reported that the present fee freeze of the 83 percentile of the 1968 fees will be changed to the 75 percentile of the 1969 fee profiles. It was pointed out that this will very likely not significantly increase the fees paid to physicians.

Mr. Blazek also pointed out that the Arizona Intermediary has been rated among the best in the country in terms of the time it takes to process claims. The national is 3.9 weeks while Arizona is half that time.

He further indicated that the percentage of physicians who are accepting assignments has dropped from 44% at the end of 1969 to 31% at the end of 1970. It was noted that the only way for a physician to be sure of getting his usual, customary and reasonable fee is by billing his patients directly and refusing to accept assignments.

Professional Standards Review Organizations (PSRO)

The broad and complicated subject of PSROs and PRO (Professional Review Organizations) were discussed in-depth. It was noted that there is much misunderstanding about this matter due to the fact that a final draft of the Bennett Amendment establishing PSROs is not available. It was pointed out that all indications are that the Social Security Amendments for 1971 will include provisions for PSROs and that it is likely that these amendments will become law within the next few months.

IT WAS MOVED AND CARRIED THAT THIS COMMITTEE RECOMMEND TO THE BOARD OF DIRECTORS THAT THE ASSOCIATION CREATE AN UMBRELLA ORGANIZATION (POSSIBLY THE ArMA FOUNDATION) FOR THE PURPOSE OF HANDLING ANY PEER REVIEW PROGRAM THAT MAY BE DICTATED BY THE SSA AMENDMENTS. THAT THIS ORGANIZATION UTILIZE, AS BEST AS POSSIBLE, EXISTING PEER REVIEW STRUCTURES WITHIN THE STATE. THAT THIS NEW ORGANIZATION BE COGNIZANT OF THE POSITION ON UTILIZATION REVIEW AS OUTLINED IN THE POSITION PAPER ON THE SUBJECT ADOPTED BY THE BOARD OF DIRECTORS AT THEIR JANUARY 31, 1971, MEETING.

AMERIPLAN

The committee reviewed the AMERIPLAN which is advocated by the Arizona Hospital Association.

IT WAS MOVED AND CARRIED THAT THIS COMMITTEE RECOMMEND THAT THE BOARD OF DIRECTORS NOT SUPPORT THE AMERIPLAN BUT THAT IT GIVE ACTIVE SUPPORT TO THE PASSAGE OF THE MEDICREDIT APPROACH TO NATIONAL HEALTH INSURANCE.

SECTION REPORTS

Section on Comprehensive Health Planning

No report.

Section on Economic Aspects of Medicare

Dr. Walker reported that Dr. William McKinley has accepted appointment to his Section.

A brief discussion of the role and function of this Section was conducted with Dr. Walker noting that one function would be to attempt to keep the membership informed on the various changes in the Medicare regulations.

Section on Indigent Care

No report.

Section on Medical Review

Dr. Moraca noted that Marvin Schneider, M.D., and Richard P. Timmons, M.D., had been appointed to the Section.

He further reported that his Section had brought to the attention of the Social Security Administration the true need for having routine EKGs covered under the Medicare program. The response from the Social Security Administration was negative.

He also noted that his Section has been asked to peer review physicians who receive over a certain amount each year from Medicare.

Dr. Moraca also reported on the AMA's Regional Conference on Peer Review held at the Townehouse on March 5-6 indicating a great variety of approaches to

Peer Review with a large number of different potential solutions.

Section on Mental Health

By letter Dr. Levenson reported the following membership of his Section:

Willis H. Bower, M.D.
Robert I. Cutts, M.D.
Thomas F. Kruchek, M.D.
Derald G. May, M.D.
Warren S. Williams, M.D.

Section on OEO and Neighborhood Health Centers

In Dr. Alexander's absence, Dr. Moraca reported on developments in Maricopa County with regard to the Comprehensive Health Planning Council's Task Force for the Poor and their Health Care Network. He pointed out that what started out as a program for providing health care for the poor was in fact a blue print for providing a certain type of health care for all residents in the Maricopa area.

Section on Research & Study

No report.

Section on Utilization Review

Dr. Spendlove reported that his Section has met several times and is exploring the problem of establishing Utilization Review guidelines. That his next meeting will be devoted to specific case reviews as a way of acquainting the Section members with the problems faced by the Medicare Part A Carrier.

Meeting adjourned 3:26 p.m.

Edward Sattenspiel, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

AD HOC COMMITTEE ON CONTINUING MEDICAL EDUCATION

The meeting of the Ad Hoc Committee on Continuing Medical Education of the Arizona Medical Association, Inc., held Tuesday, March 16, 1971 convened at 7:05 p.m. Robert E. T. Stark, M.D., chairman presiding.

MINUTES

The minutes of the meeting held January 12, 1971 were approved as distributed.

RESOLUTION 2-71

The subject resoultion which was drafted by this committee and which was approved by the Board of Directors for introduction to the House of Delegates was received for information.

ADMINISTRATIVE MEDICINE

The subject of how those physicians in "Administrative Medicine" could qualify for the requirements set forth in Resolution 2-71 was discussed.

It was determined that there were adequate provisions for these people to qualify within the structure of Resolution 2-71 — NO ACTION.

AMA'S OFFER OF ASSISTANCE

Dr. Clarke W. Mangun, Jr. letter of 2/24/71, which is reproduced in full below was reviewed.

"Dear Mr. Robinson:

"This leter will serve to review the content of our telephone conversation relating to the resolution that the Ad Hoc Committee on Continuing Medical Education may introduce at the next meeting of the House of Delegates of the Arizona Medical Association. Joining me here at the AMA for the call was Mr. Ted Lownik from Data Processing and Mrs. Melanie Scheppach and Miss Cheryl McMasters who do the review and evaluation of the applications for the AMA Award.

"We appreciate your kindness in sending us a copy of the above resolution through our field service representative. It gave us an opportunity to review the proposed resolution and suggest a cooperative plan that would seem advantageous to both organizations.

"In our discussion we proposed that the Arizona Medical Association consider using AMA resources to review, evaluate, analyze and report the continuing medical education activities reported by Arizona physicians in order to maintain Association membership.

"Though the Arizona requirements wisely provide for crediting certain locally evaluated continuing medical education activities, they are so similar to those of the AMA Award that it seems possible to use the AMA Award application form to gather the information needed for both programs. If your Association could give us information about the activities under categories 4 items e and f and category 8 that you would wish credited for your program we should be able to give you a periodic basis:

1. Which Arizona physicians have applied.
2. Those who qualified for the AMA Award.
3. Those who did not qualify for the AMA Award, but met ArMA requirements.
4. Those who did not qualify for either program.

"The above four listings would be arranged alphabetically by name and by counties and supplied to you periodically.

"At the present time, we are anticipating that the AMA Board of Trustees at its next meeting will establish a policy relative to the release of names of physicians who have qualified for the Award which would provide for supplying you with the above listings. In addition, the plans and programs of the data unit for producing the lists would need to be set up when final data requirements are agreed upon.

"This proposal would seem to have the following advantages and disadvantages for ArMA:

1. ArMA could avoid much of the work and costs of establishing and conducting a procedure for reviewing, evaluating, analyzing and reporting the continuing medical education activities of its members.
2. Consultation would be available to ArMA for establishing those parts of its program which need to be done by ArMA. This might include such things as the review and action that ArMA chooses to take in working with physicians to encourage further continuing medical education, encouraging physician reporting and procedures that might be used if a physician seems likely to lose his ArMA membership.

3. ArMA would be able to better compare its program with other states, such as Pennsylvania, which have or will have a program similar to the AMA Award. Comparisons could also be made with other physician groups or Award holders all over the country.
4. In applying for the ArMA program and the Award, a $5.00 application fee would be required by the AMA, which we presume would be paid by the individual physician. Depending on local costs, it might be possible for ArMA to establish and operate its individual program at a lower total cost for Arizona physicians.

"From our standpoint, it would have the important advantage of increasing the participation of Arizona physicians in the AMA Award Program, though there would be an added clerical, data handling and administrative load.

"We would be glad to have the opinions and suggestions of your Ad Hoc Committee on Continuing Medical Education regarding this proposal, or answer further questions that you or they may have about it. If the Committee is interested, it would seem desirable to have a definitive discussion at a later time when ArMA and AMA policy decisions, relating to this proposal, have been made.

"Thank you for your suggestion for this letter. Please convey my good wishes to Dr. Stark and his Committee.

Sincerely yours,
Clark W. Mangun, Jr., M.D."

THE GENERAL CONCEPT AS OUTLINED BY DR. MANGUN WAS ACCEPTED SHOULD RESOLUTION 2-71 BE ADOPTED BY THE HOUSE OF DELEGATES.

It was recommended that Dr. Mangun's letter be distributed to the members of the House of Delegates in the April 15th mailing.

R.M.P. PARTICIPATION

Dr. Melick reported that there have been some changes in the R.M.P. emphasis as far as continuing education for physicians is concerned. Recently continuing education has been downgraded in Washington to the point where it is not likely that any new continuing education programs will be funded. In addition, the basic budget for 1971 has been cut 8½% and next year the appropriations for all R.M.P. programs have been cut to fifty million from an anticipated 250 million. There is a new direction from Washington which points to a going away from the original concept of R.M.P., especially in the area of continuing education. Dr. Melick pointed out that this will make it necessary for ArMA to finance these education programs.

Dr. Melick recommends that a ways and means committee be set up to answer the question of how continuing education programs can be funded. This group would include the College of Medicine, R.M.P. and ArMA.

NEW CONTINUING MEDICAL EDUCATION COMMITTEE

Dr. Sattenspiel suggested that the proposed new education committee be given the responsibility of providing the various education programs if R.M.P. cannot do this job.

It was also suggested that a member of this new committee be an appointee of the Dean of the College of Medicine.

COMMUNITY SERVICE CREDITS

The concept of providing up to 50 credit hours to physicians giving time on community service projects was discussed. Dr. Sattenspiel indicated that such a concept was discussed by the Maricopa County Medical Society as a requirement for membership in that society. – NO ACTION.

Meeting adjourned 8:26 p.m.

Edward Sattenspiel, M.D.
Secretary

AD HOC FINANCE COMMITTEE

The meeting of the Ad Hoc Finance Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, March 27, 1971, convened at 7:18 p.m., Philip E. Dew, M.D., Treasurer and Chairman, presiding.

MINUTES

The minutes of the meeting held on January 30, 1971, were approved as distributed.

ASSOCIATES FOR PROFESSIONAL SERVICES

Mr. Robinson pointed out to the committee that he and Dr. Schaller had been having informal conversations regarding the possibility of the Arizona Medical Association either creating an organization similar to the Associates for Professional Service, or in fact, taking over the management of this existing organization, with the eye to expanding it to a statewide basis to provide medical services on a locum tenens basis, as well as, contracting to provide medical services in emergency rooms of the various hospitals throughout the state.

Dr. Schaller followed by giving the history of the Associates for Professional Services indicating that they at present have contracts with, for emergency room coverage, at the Good Samaritan Hospital in Phoenix, the Mesa Lutheran Hospital in Mesa, and the Boswell Memorial Hospital in Sun City.

It was the consensus of the committee that additional information would be obtained from Dr. Schaller and be submitted so that further consideration of this concept could be explored at the next meeting of the committee.

PRINTING EQUIPMENT

Mr. Robinson reported that he had been in conversation with the management of the Pepsi Cola Management Institute, who is contemplating moving out of the state in June, with regard to the possibility of obtaining the printing equipment that this organization maintains. Mr. Robinson reported that Mr. Donley, office manager of the Institute, would report back to him at a later date as to whether or not their parent firm would approve such sale of equipment and more specifics regarding the cost.

Meeting adjourned 8:41 p.m.

Edward Sattenspiel, M.D.
Secretary

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held Saturday, March 27, 1971, 810 West Bethany Home Road, Phoenix, Arizona, convened at 3:01 p.m., Fred H. Landeen, M.D., President and Chairman, presiding.

MINUTES

Minutes of the meeting held on January 30, 1971, were approved as distributed.

F.D.A. — DRUG EFFICACY STUDY IMPLEMENTATION PROJECT

Dr. Landeen introduced Jerome F. Weinroth, M.D., Deputy Director; Mr. Joshua B. Zatman, Deputy Director of Medical Communications office of the Drug Efficacy Study Implementation Project, Rockville, Maryland. The gentlemen indicated that the purpose of their visit was to discuss the many ramifications that the actions of the Food and Drug Administration have on the practice of medicine, as well as to receive from representatives of various associations, their suggestions and comments.

Much discussion and criticism was expressed over the method that the FDA has used in advising the public about so-called "ineffective or hazardous drugs."

Dr. Jarrett reviewed the activities that he had participated in regarding the testimony given to the AMA Council on Drugs on this matter.

The discussion was heated and of a stimulating nature on both sides.

Members of the committee did express great appreciation to the FDA representatives for developing this method of communicating with the practicing physicians through meetings of this kind.

Mr. Zatman summed up the recommendations of the committee as follows:

1. That practicing physicians should be on the FDA drug screening panels.
2. Faster action on getting OTC drugs off the shelves.
3. That FDA information should go directly to physicians and not to the general public.
4. That information that is sent out must be absolutely accurate so that reoccurrence of the recent diabetics problem is not repeated.
5. The combination drug policy is particularly unpopular to practicing physicians.
6. That investibative reporting forms are much too long.
7. That publications of list of drugs to be withdrawn should be in a readable, brief, understandable form.

18th ANNUAL CENTRAL ARIZONA REGIONAL SCIENCE FAIR

Jack D. Bedient, Chairman, Awards Committee of the 18th Annual Central Arizona Regional Science Fair, whose letter of March 9th was reviewed by the committee. It was determined that following consultation with John R. Green, M.D., to determine his interest, that unless there was specific interest on his part, that we not participate this year.

TRAVELERS PRE-SCREENING ADVISORY COMMITTEE

Dr. Landeen indicated that Travelers is interested in having a pre-screening committee appointed for the purposes of reviewing insurance application forms.

IT WAS MOVED AND CARRIED THAT THE EXECUTIVE COMMITTEE OF THIS ASSOCIATION FUNCTION IN THIS FASHION.

CAL-WESTERN LIFE INSURANCE PROGRAM

The subject of possibly changing our present representative for the Cal-Western Life Group Insurance Program was discussed. The committee determined that no action would be taken for at least a year in this matter.

SERVICES TO SPECIALTY SOCIETIES

Mr. Robinson indicated that the Association's service program to the specialty societies in Arizona was moving along at a nice pace. The Arizona Psychiatric Society and the Phoenix Radiological Society have signed up for this service. Should the activity increase, (such activity, of course, is self-supporting financially) that additional personnel would be needed to expand this program.

IT WAS MOVED AND CARRIED THAT MR. ROBINSON IS AUTHORIZED TO EMPLOY ADDITIONAL PERSONNEL FOR THIS PROGRAM AS THE NEED ARISES, AS WELL AS TO OBTAIN THE NECESSARY EQUIPMENT, SUCH AS DESKS, CHAIRS, TYPEWRITERS, ETC.

PUBLIC RELATIONS PROGRAM

Mr. Lamar Owens reviewed the present status of the insert "Those Who Care" which will be appearing in the next issue of the Phoenix Magazine.

Mr. Owens also reviewed the planning that has gone into the public relations efforts toward our 80th Anual Meeting.

BOARD OF DIRECTORS AGENDA

The Executive Committee reviewed the agenda for the Board of Directors meeting for March 28, 1971 and prepared a variety of recommendations.

The meeting adjourned at 5:49 p.m.

Edward Sattenspiel, M.D.
Secretary

BOARD OF DIRECTORS

Meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, March 28, 1971, a quorum being present, convened at 10:12 a.m., Fred H. Landeen, M.D., President and Chairman presiding.

WELCOME

Dr. Landeen introduced the various guests and Albert G. Wagner, M.D., gave the invocation.

MINUTES

The minutes of the meeting held on January 31, 1971 were approved as distributed.

ArMPAC BOARD OF DIRECTORS

Dr. Langston, Chairman of the Board of Directors of ArMPAC, reported on the recent AMA-AMPAC Public Affairs Workshop in Washington, D.C. He also related the current standing of 1971 membership and urged all members of the Board of Directors, who have not become members of ArMPAC, to do so.

He related that Representative Sam Steiger and Mr. Wayne W. Bradley, Assistant Director of the Department of Congressional Relations of the American Medical Association, will be the guest speakers at the ArMPAC

Banquet scheduled for Thursday, April 29, 1971, at 7 p.m., at the Convention Center in the Safari Hotel.

Dr. Langston then related the current thinking on the makeup of the Fourth Congressional District in the State of Arizona, indicating that it would probably be located in the Central and South Phoenix area, and to his knowledge, there are from 8 to 10 individuals who have either announced that they are running for the seat, or it appears that they might be running.

BOARD OF DIRECTORS

Nominees for the Hospital Advisory Council of the Arizona State Dept. of Health

Following the review of the six physicians whose names were nominated by the Maricopa and Pima County Medical Societies IT WAS MOVED AND CARRIED THAT THE FOLLOWING BE SUBMITTED TO COMMISSIONER FOR POSSIBLE APPOINTMENT:

1) WILLIAM C. SCOTT, M.D. (OBG) — TUCSON
2) RICHARD S. ARMSTRONG, M.D. (PATH) — TUCSON
3) WILLIAM A. SUSONG, M.D. (OBG) — PHOENIX

EXECUTIVE COMMITTEE

Membership Classification Changes Approved

Cochise County

a. E. B. Jolley, M.D., Active to Associate — Account Retirement — effective 1/1/71 — Dues Exempt.

Greenlee County

a. Lynn Hilbun, M.D., Active to Active Over 70 — Account age — effective 1/1/71 — Dues Exempt.
b. Eugene F. Pfanner, M.D., Active to Active Over 70 — Account age — effective 1/1/71 — Dues Exempt.

Maricopa County

a. Louise Bewersdorf, M.D., Dues exempt due to financial hardship — effective 1/1/71.
b. Daniel Condon, M.D., Active to Associate — Account illness — effective 1/1/71 — Dues exempt.
c. Frank Edel, M.D., Active to Associate — Account illness — effective 1/1/71 — Dues exempt.
d. Louis Katz, M.D., Active to Associate — Account residency — effective 1/1/71 — Dues exempt.
e. Ernest H. Watts, M.D., Active to Associate — Account illness — effective 1/1/71 — Dues exempt.

Pinal County

a. J. Bruce Tucker, M.D., Active to Associate — Account retirement — effective 1/1/71 — Dues exempt.

Pima County

a. Samuel R. Joseph, M.D., Active to Associate — Account illness — effective 1/1/71 — Dues exempt.
b. Laurence Stern, M.D., New member as Associate — Account residency — effective 2/9/71 — Dues exempt.
c. Theodore S. Wittels, M.D., Active to Associate — Account illness — effective 1/1/71 — Dues exempt.

Financial Statement for period ending 2/28/71

Dr. Dew reviewed the financial statement for period ending February 28, 1971 and indicated that a budget for the Grievance Committee in the amount of $405.00 was desirous. REPORT RECEIVED.

IT WAS MOVED AND CARRIED THAT THE 1971 BNDGET BE ADJUSTED FOR THE GRIEVANCE COMMITTEE IN THE AMOUNT OF $405.00.

Audit Report of 1970

Dr. Dew reviewed the audit report for the year ending December 31, 1970, as prepared by Henry & Horne, Certified Public Accountants. REPORT RECEIVED.

FINANCE COMMITTEE

Auto Lease Program

Dr. Dew indicated that since the beginning of the Auto Lease Program, which is less than a month old, we have twenty-seven people who have expressed interest in participating in this program. Mr. Robinson reported that the leasing agency has indicated that the program is going smoothly at this time. He also indicated that it was his plan to contact the various physicians who are participating in the plan after several months to be sure that they are happy with the arrangements.

Printing Equipment

Dr. Dew indicated that Mr. Robinson has undertaken negotiations with a local organization that is terminating its business here with the possibility of taking over their entire printing plant, so that this Association would have adequate equipment in this area to take care of its needs plus, perhaps, providing services to the specialty groups and others who might need it in the medical profession.

GOVERNMENTAL SERVICES COMMITTEE

Aetna Release #39 — Nursing Home Visits

Dr. Landeen reviewed the recommendations of the Governmental Services Committee dealing with the recent release #39, which reads as follows:

> "New regulations require carriers to assume that a visit by a physician to a nursing home involves services to several patients. In applying this concept, a lower charge will generally be allowed unless the billing form clearly indicates that only one patient was seen.
>
> "Whenever services are rendered to only one patient in a nursing home, it is recommended that the phrase 'only patient seen' be used on the billing form, or in item 7C of Medicare claim Form 1490. This will assure an equitable reasonable charge determination. Failure to supply this information will result in a lower claim payment."

The Board discussed the ramifications of this restrctive approach to health care.

IT WAS MOVED AND CARRIED THAT THE BOARD OF DIRECTORS PREPARE A RESOLUTION FOR SUBMITTAL TO THE HOUSE OF DELEGATES IN APRIL THAT WOULD ADVISE THE AMERICAN MEDICAL ASSOCIATION AND THE BUREAU OF HEALTH INSURNCE THAT REGULATIONS OF THIS NATURE ARE AIMED AT ONLY A VERY SMALL PORTION OF THE PRACTICING PHYSICIANS WHO ABUSE THE PROGRAM, AND THESE FEW SHOULD BE HANDLED BY LOCAL PEER REVIEW COMMITTEES INSTEAD OF BROAD REGULATIONS AS WAS PROMULGATED IN AETNA RELEASE #39.

Professional Standards Review Organizations — (PSRO)

The recommendation of the Governmental Services Committee that the Board of Directors create an umbrella organization for the purpose of handling any peer review program that may be dictated by the Social

Security Administration amendments was discussed. It was noted that the Committee suggested that such an organization utilize as best as possible any existing peer review structures within the state, such as the Pima County Foundation for Medical Care and the Maricopa County Foundation for Medical Care. Also, this new organization be cognizant of the position of utilization review as outlined in the position paper on the subject adopted by the Board of Directors at their January 31, 1971 meeting.

Following considerable discussion, it was suggested that a resolution be prepared giving a general outline of such an organizational structure for consideration by the Board of Directors at its meeting on April 27. 1971.

AMERIPLAN

Dr. Landeen noted that the Governmental Services Committee had considered the matter of supporting or not supporting the "AMERIPLAN" as an approach to national helath insurance.

IT WAS MOVED AND CARRIED THAT THE BOARD OF DIRECTORS GO ON RECORD AS NOT SUPPORTING THE AMERIPLAN APPROACH; BUT THAT IT GIVE ACTIVE SUPPORT TO THE PASSAGE OF THE MEDICREDIT APPROACH TO NATIONAL HEALTH INSURANCE.

LEGISLATIVE COMMITTEE

Dr. Flynn reviewed the current status of the various bills that this Association is interested in, which are 35 in number.

Considerable discussion ensued over H.B. 9, which sets up a separate Department of Mental Health outside of the Arizona Department of Health. The Association's position on this bill had been "nonsupport." The discussion was centered on the advisability of changing our position from "nonsupport" to "general support." A motion was made to make that change, however it did not pass. The report as submitted, was received.

Mr. Gary L. Barnett, Associate Executive Director, was commended by the President, and other members of the Board, for the excellent work that he has been doing in legislative liaison.

AMA DELEGATE

June AMA Meeting Attendance

IT WAS MOVED AND CARRIED THAT THE TWO DELEGATES, TWO ALTERNATE DELEGATES, THE PRESIDENT, THE EXECUTIVE DIRECTOR AND THE ASSOCIATE EXECUTIVE DIRECTOR BE AUTHORIZED TO ATTEND THE JUNE AMA MEETING IN ATLANTIC CITY.

CODAC

Dr. Cloud indicated that arrangements had been made for a member of the CODAC program to participate in a panel on drug abuse at the AMA meeting in June and that there was some question as to the possibility of this Association contributing toward the transportation of that person to the meeting. No action taken.

Arizona's Resolution 15 —
Regarding F.D.A. Drug Withdrawals

Dr. Cloud reviewed, with the assistance of Dr. Jarrett, the background of our Resolution 15 introduced at the Annual Meeting of the AMA in 1969 and the apparent shuffle that it had been subjected. The letter of March 16, 1971 from Ernest B. Howard, M.D., Executive Vice President of the AMA, was noted, in which it was stated that the Council on Drugs would be meeting in May and it was hoped that a report would be forthcoming at the June meeting. Dr. Jarrett also indicated that he had received a letter from Russell Roth, M.D., Speaker of the House of the AMA, on this subject.

AMA Clinical Convention in Phoenix

The matter of the possibility of having an AMA Clinical Meeting in Phoenix in 1978 was reviewed by Dr. Cloud.

IT WAS MOVED AND CARRIED THAT WE EXTEND AN INVITATION TO THE AMERICAN MEDICAL ASSOCIATION TO HOLD THE CLINICAL MEETING OF THAT ORGANIZATION IN THE YEAR 1978 IN PHOENIX ON THE CONDITION THAT THE PROPOSED HOTEL ARRANGEMENTS ARE FIRM BY THAT TIME.

COMMUNICATIONS

U.S. Pharmacopeial Convention Appointment

At the January 31st Board of Directors meeting, staff was asked to contact the College of Medicine to see if they had a suggested name, as a delegate to the U.S. Pharmacopeial Convention. This Association received correspondence dated February 17th from Merlin K. DuVal, M.D., indicating that they do not wish to nominate anyone at this time.

The name of Roy Weinrach, M.D. was suggested and Dr. John R. Green and Paul Jarrett, M.D., were to talk with Dr. Weinrach to determine if he would be interested in accepting this appointment.

SAMA Letter March 14, 1971

John N. Heringer's letter of 3/14/71, Arthur V. Dudley, Jr., M.D.'s letter of 3/16/71 and Mrs. Anna C. Bebee, Secretary-Treasurer of SAMA, University of Arizona, College of Medicine's letter of 3/19/71, were discussed at some length. These letters dealt with three basic requests.

1. **MECO Program**
 Arthur V. Dudley, Jr., M.D. explained to the Board the SAMA project for medical education and community orientation, which is primarily a projcet to provide in-hospital or in-large-clinic job openings during the summer for medical students. It was suggested that this Association ask the Arizona Hospital Association to assist in finding hospital positions for these students during the summer.
2. **SAMA National May 4-8, 1971**
 The request was made that we assist in providing funds to send SAMA representatives to their national convention scheduled for May 4-8, 1971, in St. Louis, Mo. IT WAS MOVED AND CARRIED THAT $100 BE PROVIDED FOR THIS PURPOSE.
3. **Speakers at SAMA Meetings**
 Request was made that M.D. speakers be arranged to speak at the various meetings at the SAMA chapters. It was determined that such a request should go out to the membership of this Association in a subsequent issue of Medical Memos.

OTHER BUSINESS

Proposed resolution —

"A Department of Family Practice"

The resolution that was submitted to the Board of Directors at their January 31st meeting, which was referred for rewriting, was resubmitted for discussion. Extensive discussion ensued with the benefit of having the Dean of the College of Medicine present at the meeting to express the School's position on such resolutions. Many aspects of this problem were dealt in great detail.

IT WAS MOVED AND CARRIED THAT THIS RESOLUTION BE INTRODUCED BY THE BOARD OF DIRECTORS AS AMENDED. (THE AMENDED RESOLUTION IS REPRODUCED IN FULL BELOW)

WHEREAS, There is a growing public concern over matters related to health, and the availability of health care services; and

WHEREAS, The family physician has been and should continue to be best qualified to provide access to comprehensive health care; and

WHEREAS, The American Board of Family Practice is now recognized by the AMA as a new and accepted specialty board; and

WHEREAS, Since this is a new specialty it now rates a status of a full department in medical school; and

WHEREAS, There is a disturbing shortage of family physicians in the State of Arizona and in the nation; and

WHEREAS, Fewer graduating doctors of medicine are entering family practice because they are not aware of the opportunities and rewards available to family physicians; and

WHEREAS, The College of Medicine of the University of Arizona should prepare an adequate number of its students to meet these public needs for more primary physicians; therefore be it

RESOLVED, In order to accomplish these ends and make a family practice program more attractive, effective, and productive the Arizona Medical Association here assembled does hereby go on record recommending emphasis on Family Practice at the University of Arizona College of Medicine and increasing involvement of faculty members of sufficient experience in active family practice to teach the management of comprehensive family health care; and be it further

RESOLVED, That a copy of this resolution be sent to the Board of Regents of the State of Arizona and the Dean of the College of Medicine of the University of Arizona for appropriate action.

Director of Pima County Health Department

Richard R. Willey, Ph.D., President, Pima County Board of Health and Hospital Services, in a letter of March 10, 1971, requested information on potential candidates to replace Frederick J. Brady, M.D., who is retiring, was reviewed by the Board. — RECEIVED.

Travelers Malpractice Program Report

Fred H. Landeen, M.D., President, reported that as of 3 p.m. on Friday, March 26th, 461 applications had been received to date and that 137 additional applications would be needed in order to reach the 40% participation level, which is our current goal.

He also reported that the Insurance Rating Bureau had filed a 10% increase as of March 24, 1971, for malpractice insurance and that we have received communication from Travelers that our program rates will not be increased and that the Travelers is filing a 10% deviation with the State Insurance Bureau to accomplish this. — REPORT RECEIVED

Federal Government Advisory Boards

Ernest B. Howard, M.D., Executive Vice President of the American Medical Association, recent letter encouraging physicians to complete biographical information forms for possible appointments to various federal governmental advisory bodies was received.

Ad Hoc Committee on Occupational Health Budget

It was pointed out by Dr. Dew that a budget for this committee had not been established for 1971.

IT WAS MOVED AND CARRIED THAT A BUDGET OF $1,000 BE ESTABLISHED FOR THIS COMMITTEE FOR THE YEAR 1971.

Slide Presentation on AMA Activities

Mr. Dave Morrison, Field Representative of the American Medical Association presented a 20 minute slide presentation on the many activities of the American Medical Association for the information and edification of the members of the Board.

Meeting adjourned at 1:20 p.m.

Edward Sattenspiel, M.D.
Secretary
by
Bruce E. Robinson
Executive Director

ERRATA:

A printing error appears in the title of the paper appearing on page 264 — April 1971 issue of ARIZONA MEDICINE.

The correct title is as follows:

SALINE SUPPRESSION OF PLASMA ALDOSTERONE AND RENIN IN HYPERTENSION

Authors: David C. Kem, Major, M.D., Darrell Mayes, Myron H. Weinberger, M.D., Charles A. Nugent, M.D.



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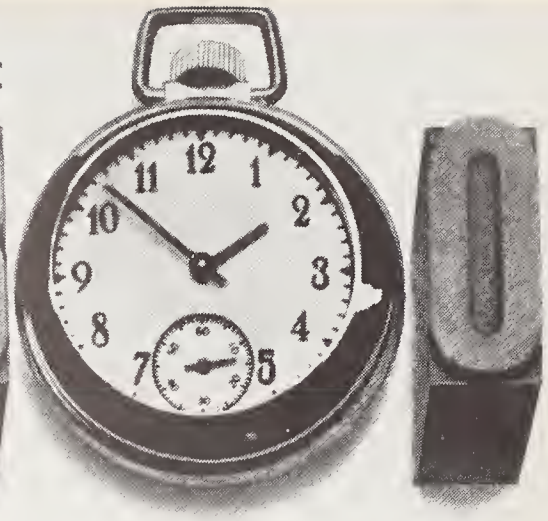
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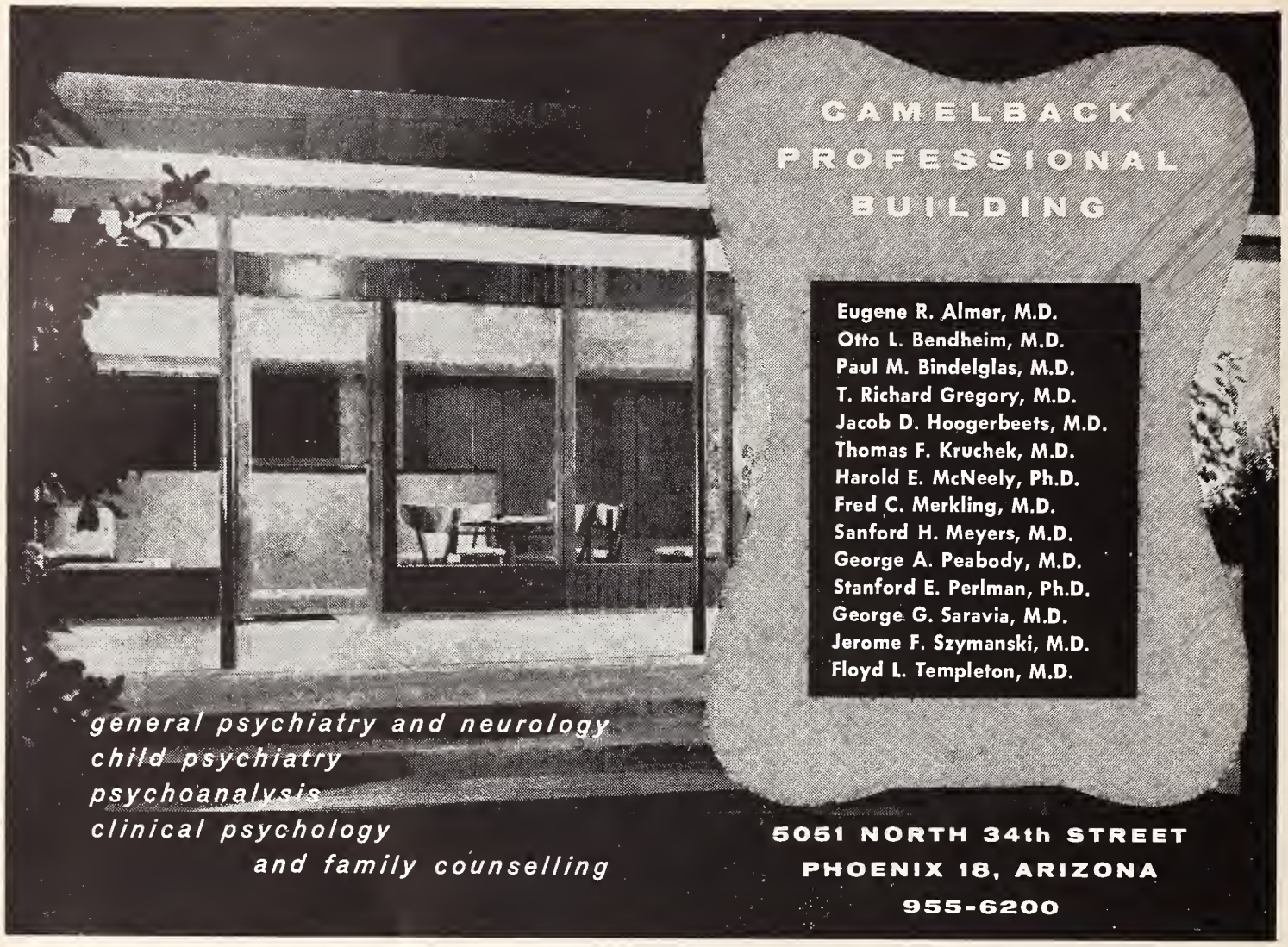
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An excerpt from No. 1 of a new series from Searle*

"The Ecology of Birth Control"

75 million more Americans—what impact on health care?

Because of a declining birthrate in the United States—attributable in no small measure to the widespread use of contraceptives—our population in thirty years is expected to be *only* 280 million, while the world population is expected to double, reaching 7 billion.

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The global consequences may be no less devastating. Ecologists estimate that every American has roughly fifty times the negative impact on the Earth's life-support systems of, say, a citizen of India. In these terms, adding 75 million Americans would be equivalent to adding 3.7 billion Indians to the world population.

**For the complete brochure, and others in the series as they appear, please write to Searle or ask your Searle representative.* Explored in the forthcoming issues will be the role of birth control on family pressures and its effects on the family; the influences of poverty, ethnic factors and marital status; its role in illness, its genetic implications and its effects on the emotional and behavioral life of the individual.

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Efudex®
(fluorouracil)
cream/solution

In the treatment of solar/actinic keratoses-
An alternative to cold, fire and steel

2/23/68
Before treatment with 5% 5-FU cream. Patient R. G., 78 years old, shows extensive skin changes due to weathering and severe solar/actinic keratoses.

3/26/68
Following one month of therapy. Intense erythematous reaction is seen at sites of keratoses. Normal skin has not reacted. Some areas which had reacted initially have undergone healing despite continued topical application of 5% 5-FU.

6/11/68
Ten weeks after discontinuance of therapy. All areas have healed complete Residual mild erythema remains in son areas. This patient also had seborrheic keratoses which, as expected, have not reacted. There is no evidence of residua lesions or recurrences.



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ı alternative conventional therapy

Efudex (fluorouracil) offers the physician a al alternative to cryosurgery, electrodesiccation old-knife surgery in the treatment of solar/actinic toses. It is effective, comparatively inexpensive and ially well suited for treatment of these multiple ns. Important, too, is the highly desirable cosmetic t. Clinical experience demonstrates that treatment Efudex results in an extremely low incidence of ing.*

ghly effective

In clinical trials, depending on the dosage form strength used, complete involution occurred in 88 per cent of lesions following treatment. The of recurrence was low, ranging from 1.7 to 5.6 per up to a year after completion of therapy. When lesions appeared, repeated courses of Efudex ipy proved effective.*

edictable erapeutic response

Two to four weeks constitutes a typical course udex therapy. The response is usually characteris- d predictable. After three or four days of treat-, erythema begins to appear in the area of keratoses. is followed by an intense inflammatory response, ng and occasionally moderate tenderness or pain. height of the inflammatory reaction generally occurs weeks after the start of therapy, and then begins bside as treatment is stopped. Within two weeks of ntinuing medication, the inflammation is usually . A mild erythema may remain for two or three ths before gradually receding. Since this response predictable, lesions which do not respond ld be biopsied.

o strengths—two sage forms

Efudex is available as a 2% or 5% solution or 5% cream. It is applied twice daily by the patient a nonmetal applicator or suitable glove.

Before prescribing Efudex, however, two im- nt considerations: First, please consult the com- prescribing information for precautions, warnings and adverse reactions. Second, advise the patient that treated lesions should respond with the characteristic but transient inflammation. A positive sign that Efudex is working for them.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Multiple actinic or solar keratoses.

Contraindications: Patients with known hypersensitivity to any of its components.

Warnings: If occlusive dressing used may increase inflammatory reactions in adjacent normal skin. Avoid prolonged exposure to ultraviolet rays. Safe use in pregnancy not established.

Precautions: If applied with fingers, wash hands immediately. Apply with care near eyes, nose and mouth. Lesions failing to respond or recurring should be biopsied.

Adverse Reactions: Local—pain, pruritus, hyperpigmentation and burning at application site most frequent; also dermatitis, scarring, soreness and tenderness. Also reported—insomnia, stomatitis, suppuration, scaling, swelling, irritability, medicinal taste, photosensitivity, lacrimation, leukocytosis, thrombocytopenia, toxic granulation and eosinophilia.

Dosage and Administration: Apply sufficient quantity to cover lesion twice daily with nonmetal applicator or suitable glove. Usual duration of therapy is 2 to 4 weeks.

How Supplied: Efudex Solution, 10-ml drop dispensers—containing 2% or 5% fluorouracil on a weight/weight basis, compounded with propylene glycol, tris(hydroxymethyl)-aminomethane, hydroxypropyl cellulose, parabens (methyl and propyl) and disodium edetate.

Efudex Cream, 25-Gm tubes—containing 5% fluorouracil in a vanishing-cream base consisting of white petrolatum, stearyl alcohol, propylene glycol, polysorbate 60 and parabens (methyl and propyl).



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JUNE, 1971/VOL. 28, NO. 6

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COVER

This month's cover is in honor of Merlin K. DuVal, Jr., M.D., better known as "Monte," for his assumption of that horrendous job as Assistant Secretary of HEW for health and scientific affairs. We refer you to page 450 for additional information.

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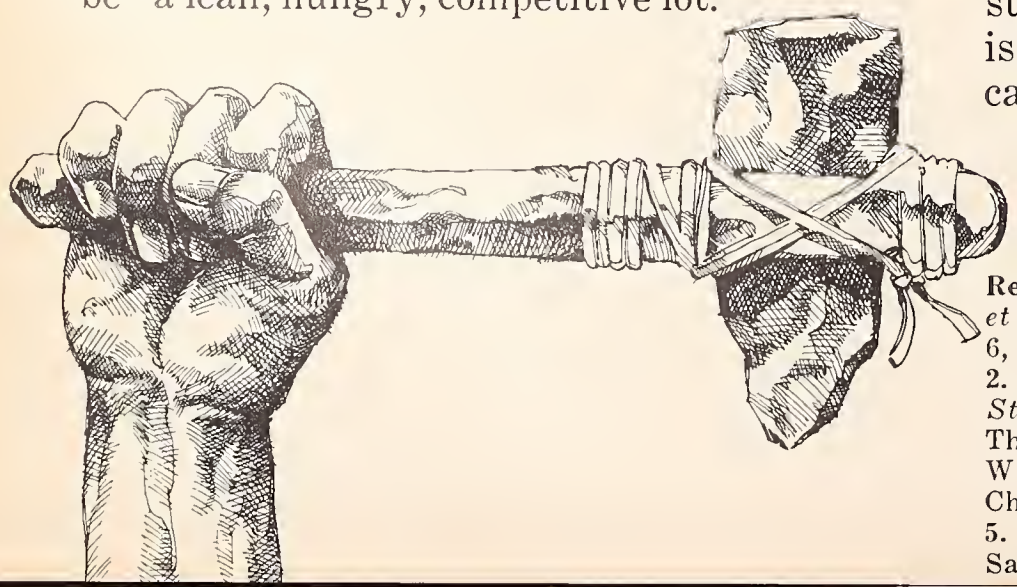
IF MORE MEN CRIED



At least seventy-five out of one hundred adults with duodenal ulcers are men.[1] Why? It may be significant that duodenal ulcer patients tend to crave recognition and are "especially vulnerable to threats to their manly assertive independence."[2]

Hypersecretion—an atavistic response. Stewart Wolf, who, with Harold G. Wolff, studied the personalities of duodenal ulcer patients, wonders if masculine competitiveness is related to "an atavistic urge to devour an adversary." It is striking, he reports, that an accentuation of gastric acid secretion and motility can be "induced in ulcer patients by discussions that arouse feelings of inadequacy, frustration and resentment."[2]

By chance? A lean, hungry lot. Was the link between emotions and gastric hyperacidity acquired through mutation to serve a purpose? During man's jungle period of evolution, the investigator points out, a male dealt with a foe by killing and devouring it. "It may be more than coincidence," he concludes, that peptic ulcer patients appear to be "a lean, hungry, competitive lot."[3]



Big boys don't cry. If more men cried maybe fewer would wind up with duodenal ulcers. But men will be men—the sum total of their genes and what they are taught. Schottstaedt observes that when a mother admonishes her son who has hurt himself that big boys don't cry, she is teaching him stoicism.[4] Crying is the negation of everything society thinks of as manly. A boy starts defending his manhood at an early age.

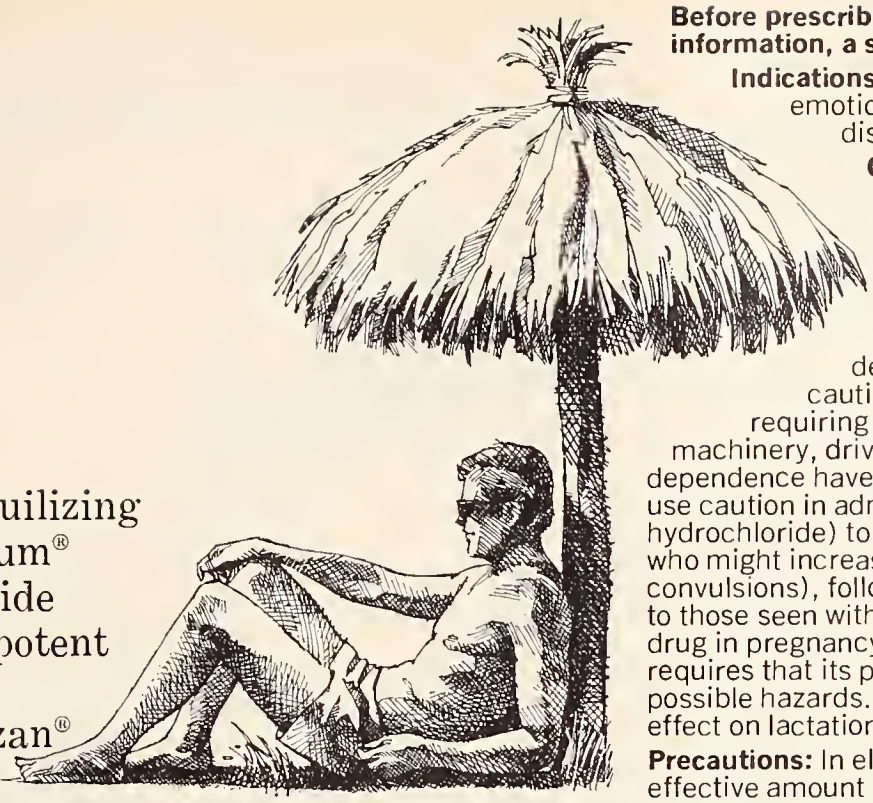


Take away stress you can take away symptoms

There is no question that stress plays a role in the etiology of duodenal ulcer. Alvarez[5] observes that many a man with a ulcer loses his symptoms the day he shuts up the office and starts out on a vacation. The problem is, the type of man likely to have a ulcer is the type least likely to take long vacations or take it easy at work.

The rest cure vs. the two-way action of Librax.® For most patients, the rest cure is as unrealistic as it is desirable. Still, the stress factor must be dealt with. And here is where the dual action of adjunctive Librax can help. Librax is the only drug that com

References: 1. Silen, W.: "Peptic Ulcer," in Wintrobe, M. M. *et al.* (eds.): *Harrison's Principles of Internal Medicine*, e 6, New York, McGraw-Hill Book Company, 1970, p. 144 2. Wolf, S., and Goodell, H. (eds.): *Harold G. Wolff Stress and Disease*, ed. 2, Springfield, Ill., Charles Thomas, 1968, pp. 68-69. 3. *Ibid.*, p. 257. 4. Schottstaed W. W.: *Psychophysiologic Approach in Medical Practic* Chicago, Ill., The Year Book Publishers, Inc., 1960, p. 16 5. Alvarez, W. C.: *The Neuroses*, Philadelphia, Pa., W. B Saunders Company, 1951, p. 384.



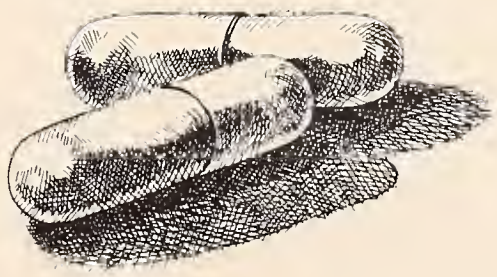
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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering Librium (chlordiazepoxide hydrochloride) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards. As with all anticholinergic drugs, an inhibiting effect on lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude development of ataxia, oversedation or confusion (not more than two capsules per day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

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Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

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2. Be guided by the general rules of medcal writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

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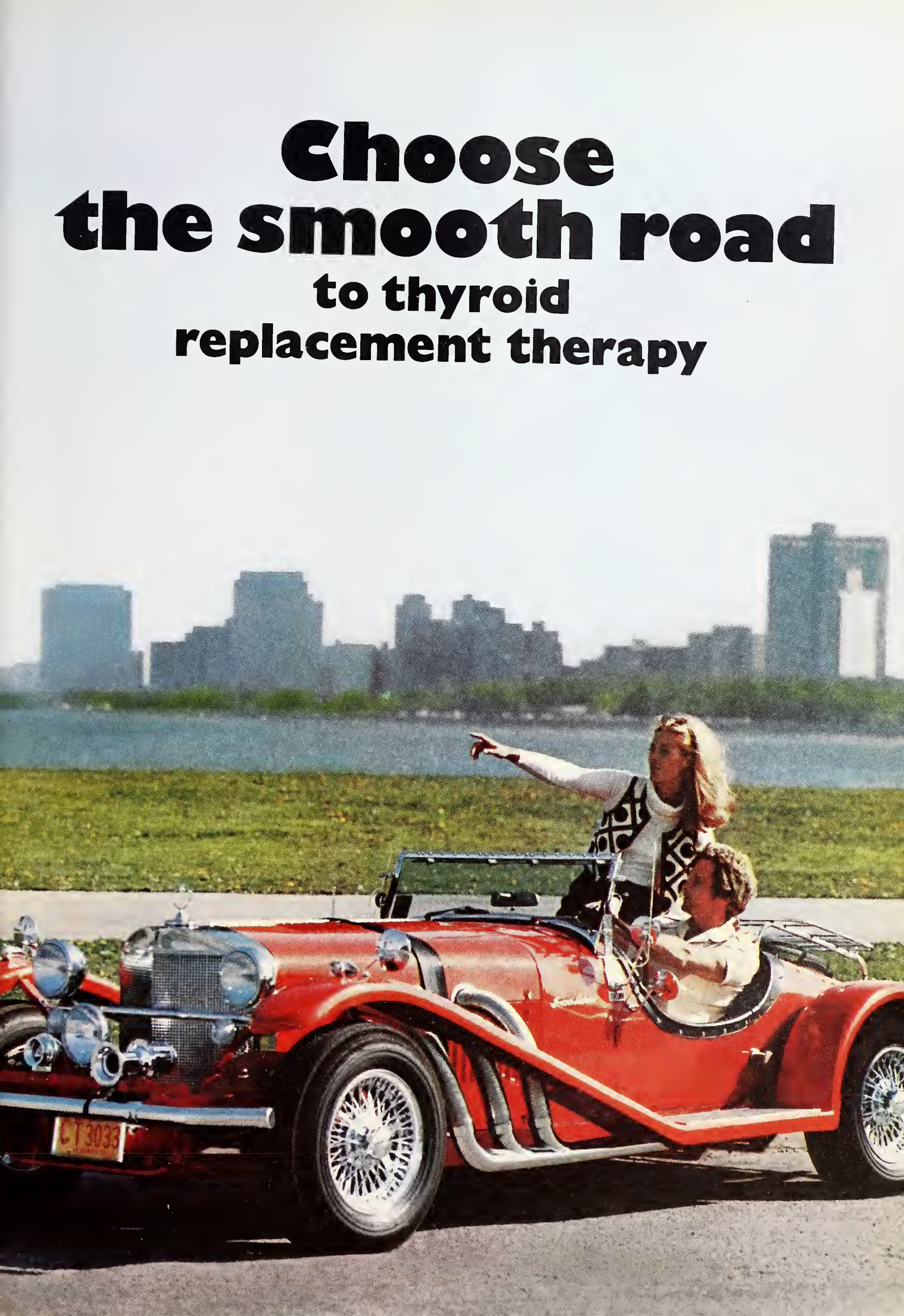
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Refereneeș: **1.** Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. **2.** Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 4, New York, The Macmillan Company, 1970. **3.** Vickers, F. N.: Gastroint. Endosc. *14*:94, 1967. **4.** Mielke, C. H., Jr., and Britten, A. F. H.: New Engl. J. Med. *282*:1270, 1970 (Corresp.). **5.** Kestler, O. C., and Gyurik, J.: Industr. Med. Surg. *21*:372, 1962. **6.** Forster, S., et al.: Amer. J. Orthop. *2*:285, 1960. **7.** Data on file, McNeil Laboratories, Inc. **8.** Friend, D. G.: Clin. Pharmacol. Ther. *5*:871, 1964.

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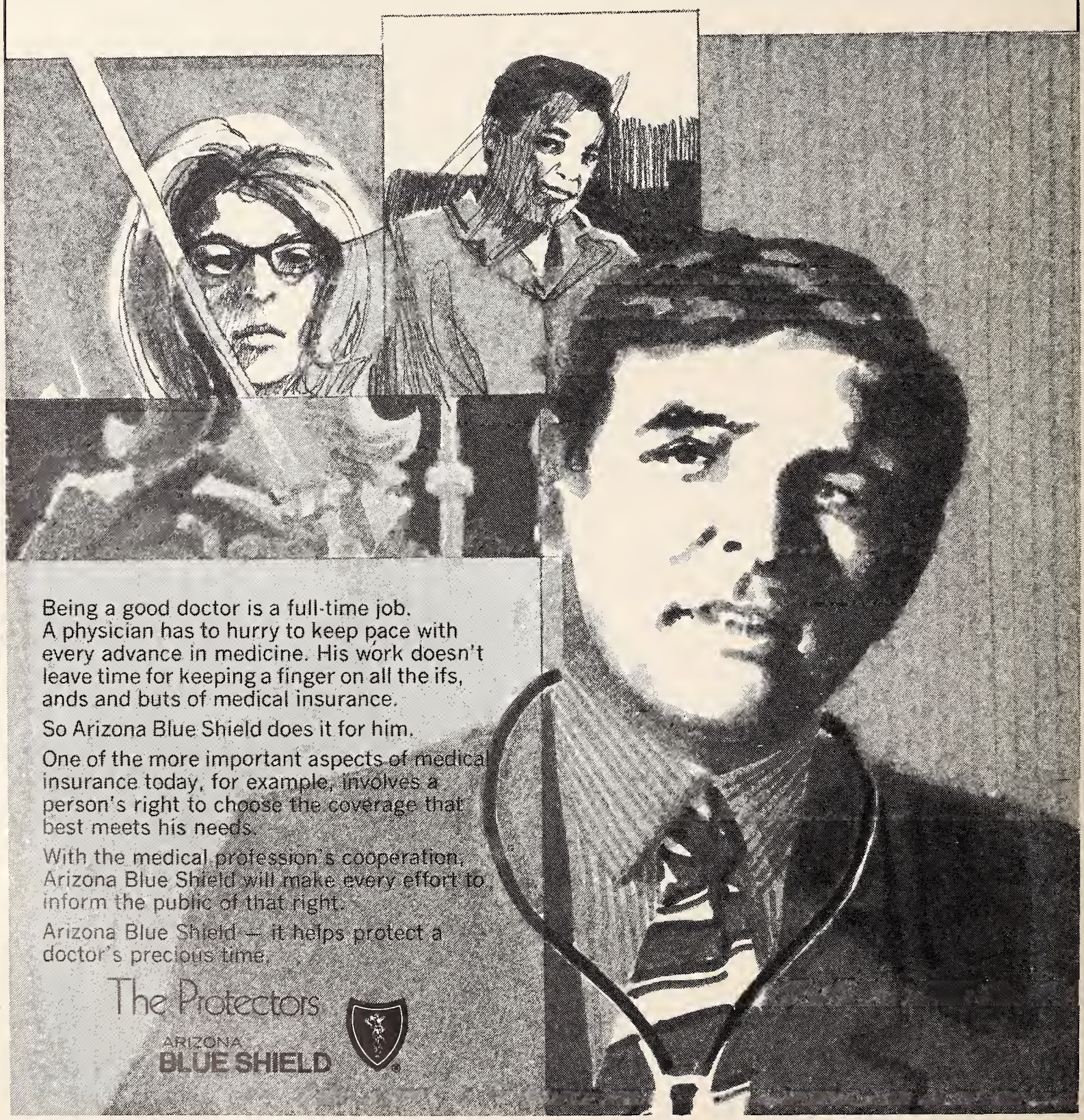
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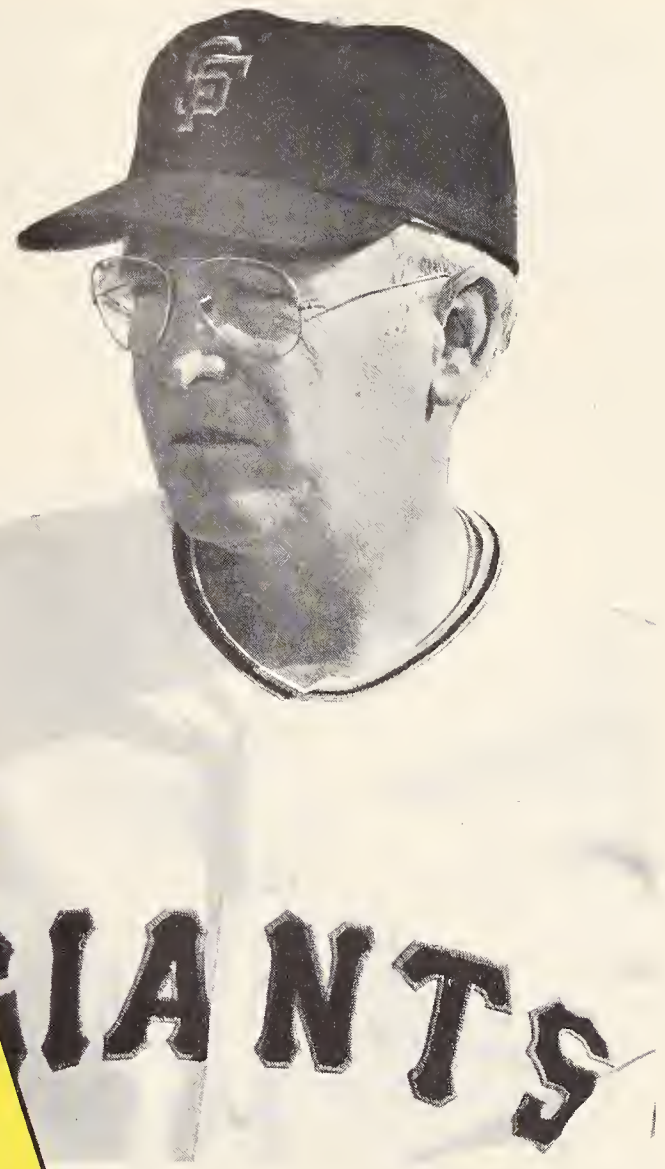
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THE NEW PHOENIX INDIAN MEDICAL CENTER: *A HISTORY OF ITS PREDECESSORS*

MAURICE L. SIEVERS, M.D.

Senior Clinician, Internal Medicine and Clinical Research, Phoenix Indian Medical Center.

Presented November 25, 1970 at the first staff meeting in the new Phoenix Indian Medical Center, 4212 North 16th Street, Phoenix, Arizona 85016.

I am very priviledged to have the opportunity to participate in this first staff meeting in the new Phoenix Indian Medical Center. As a new era for Indian medical services begin, it is appropriate to review some events of the past, both to see how far we have come and, hopefully, to offer inspiration for the future.

Although this presentation may seem to emphasize facts concerning the progressive development of physical assets—buildings, funds and facilities — we must keep in mind that these are only the tangible evidences of the successful efforts of many dedicated people who have been concerned with the health care of Indians. The identities of most of these have been obscured by lack of documentation and the passing of time. Only a relatively few names and events can be mentioned.

The First Phoenix Indian Hospital: In the book, "Medicine in Territorial Arizona," Frances E. Quebbeman[1] states that the early medical services for Indians were without an overall plan. Each of the physicians hired by the government often had a clinical practice among the Navajo in 1890 encompassing as much as 12,000 square miles and a population of around 18,000. The Bureau of Indian Affairs recognized the inadequacies of medical care for Indians, as discussed by Quebbeman:[1]

"Dr. Ales Hrdlicka was employed to invesigate Indian Health in the United States in 1908. The report gave a deplorable picture of Indian health. Especially noted was the spread of tuberculosis and trachoma among Indians of the Southwest. A strenuous campaign and special field investigations started. (Later) a hospital was opened at the Indian School in Phoenix which cost $12,000."

An October 1934 article[2] in "The Modern Hospital" journal described the original Phoenix hospital for Indians as follows:

"In a somewhat obscure corner not far from the city limits of Phoenix is a building that once served as a hospital. There is nothing about it to advertise it as such. In fact, we are told it was a hospital chiefly because of the good intentions of the men and women who labored there. They were few, and the equipment and facilities at their disposal were meager, to say the least.

"Those familiar with the Phoenix Indian School Hospital will attest to the fact that it comprised twelve beds in all, distributed be-



Figure 1.
A 1934 photograph of the "new" Phoenix Indian Hospital exterior.



Figure 2.
A 1934 photograph of the interior of the male ward of the "new" Phoenix Indian Hospital.

tween two wards. Private rooms were lacking and there were no isolation accommodations. There were no such things as obstetrical or surgical departments, and the staff comprised an overworked doctor, a nurse, and a cook.

"It represented the 'house' of the white medicine man, however, and despite its obvious limitations it performed an heroic work. It marked progress, too, in that it eliminated the necessity for performing operations and administering medical aid on the dirt floor of an Indian tepee (sic). Even though it was necessary at times to search from cellar to attic to find enough instruments to carry on, through its services the Indian was brought in contact with more scientific and modern methods of treatment than those to which he was accustomed in the past."

The Second Phoenix Indian Hospital: In contrast to these stark details about the original hospital, the 1934 article[2] was quite lavish in its compliments for the recently constructed Indian medical facility, as follows:

". . . A short distance outside of Phoenix . . . the old hospital is still there. Down the street is the new Phoenix Indian School Hospital, an attractive building designed in bungalow style with wings extending out on each side of the main entrance . . .

"Approximately $65,000 was expended in establishing this modern medical unit for Indians, and . . . it is generally recognized as one of the most complete and best equipped hospitals in or near the Salt River Valley . . . It boasts of sixty beds, with two large wards, a dozen private rooms, a first class diet kitchen, fracture beds, modern sterilization facilities and almost every convenience that the modern hospital offers . . .

"Its corridors are wide and airy, with almost noiseless floors that are kept immaculately clean . . . To the left of the main entrance, on the south side, is the maternity wing; to the right, on the north, are the surgical and medical departments. Wards are spacious and light. Porches, easily accessible, make it possible to give the convalescent patient the full benefit of the healing properties of sun and air, for which this Arizona climate is far famed."

The staffing of the 60-bed hospital was presented[2] in some detail with a few general comments:

"Responsibility for the entire institution, including all surgical and medical work, rests with Dr. Fred Loe . . . In addition . . . the hospital staff comprises some eleven persons, each of whom of necessity reveals marked versatility. The superintendent, (Miss) Ollie Bosch, is responsible with Dr. Loe for the maintenance of the entire building . . . She is far more likely to be found standing over a bed in one of the wards than at her desk in the front office.



Figure 3.

A 1934 photograph of the staff of the "new" Phoenix Indian Hospital. In the center is Dr. Loe; to his right is Miss Ollie Bosch and Miss Julia Eschief (R.N.). At the viewer's extreme right is the cook, Mrs. Bailey.

"Another interesting member of the staff is Julia Eschief, R.N., a full-blooded Pima Indian . . . (and an exceedingly attractive young woman) who has already achieved a considerable reputation for skillful work in the operating room . . . took one year of training in the old Phoenix Indian School Hospital . . . graduated from (Good Samaritan Hospital in Phoenix), passed her state board examinations and returned to the Indian School Hospital for active work. Miss Eschief carries the distinction of being the first full-blooded Pima Indian from the Salt River Valley to finish her nurse's training in the valley.

"Mention should likewise be made of the orderly who, in addition to performing his regular functions, keeps the hospital attractive as well. It would be difficult to find floors kept in better condition than those in the Indian School Hospital.

"Another person of versatility is the carpenter who supervised the construction of the new building . . . The many economies achieved . . . are attributed to this man's intelligent guidance."

The dedication of the staff and achievements of the Indian School Hospital were discussed[2] as follows:

"In an institution such as this, it is clearly the cooperative spirit of each worker that maintains the morale of the entire unit to the highest degree. It means stepping out of one role and assuming another at the shortest notice. It means meeting all kinds of emergencies no matter what personal sacrifice.

"Success in treating Indians who have been brought to the hospital has contributed in large measure to overcoming the suspicion that has surrounded the white medicine man and his 'house.'

"Hospitalization affords an opportunity for educating the Indian on health measures with which he has heretofore been wholly ignorant. Probably most common are the cases involving infections . . ."

Table 1
Data regarding previous Phoenix Indian Medical Center (PIMC) facilities.

Name of Facility	Date Built	Approximate Cost	Location	Number of Beds	Number of Staff
General Medical-Surgical:					
1. Original Indian Hospital	1912-1913	$ 12,000	Ind. Sch. grounds	12	3
2. Second Indian Hospital	1932-1933	65,000	Ind. Sch. grounds	60	11
3. Renovated facilities	1959-1961	140,000	(1) Above; plus (2) 16th-Ind. Sch. Rd.	137	170
4. New PIMC	1970	$7,500,000	N. 16th St. at E. Ind. Sch. Rd.	200	415
Tuberculosis Hospital:					
1. Original Indian Sanatorium	1912-1914-?	?	N. 16th St. at E. Ind. Sch. Rd.	(About 8 tents)	(Unk)
2. Newer Indian Sanatorium:					
a) "Old Infirmary	1916	14,588	(same)	?	—
b) "New" Infirmary	1930	29,500	(same)	50*	—
c) Boys Building	1931	24,123	(same)	25**	—
d) Laundry Building	1935	2,730	(same)	—	—
e) Women's Building	1937	115,708	(same)	50***	—
f) Dining Hall	1937	43,622	(same)	—	—
g) Miscellaneous****	1915-1928	49,608	(same)	—	—
TOTAL COST		279,879			

*Male Patients.
**Not used for inpatients, because of technical problems.
***Female patients.
****Superintendent's residence, cottages, warehouse, boiler house, barnes, garages, etc.

The Indian Tuberculosis Hospital and the Conversions of Facilities: Between about 1912 and 1937, various structures for the Phoenix Indian Tuberculosis Hospital were built on a site north of East Indian School Road and west of North 16th Street (the "East Farm"). The earliest facilities had only suspended roofs without constructed walls. The sides were covered by canvas, which was often raised for the open air treatment of tuberculosis, then in vogue. A succession of later buildings replaced the tent-like structures, eventually providing facilities for about 100 tuberculosis patients. The combined unit of this tuberculosis sanatorium and the general medical and surgical hospital on the Phoenix Indian School grounds was referred to as the "Phoenix (Indian) Medical Center."

Even before the 1955 transition of responsibility for Indian medical care from the Bureau of Indian Affairs to the Public Health Service, a need for new, larger and consolidated facilities was realized. But the planning was lengthy and repetitive. While waiting hopefully for a new hospital "PHS made" various renovations in the antiquated widely separated old structures. Contract arrangements were made for the Indian tuberculosis patients to receive care at the Oshrin Hospital in Tucson, after which the male tuberculosis building was converted to the medical and pediatric wards and a laboratory in 1959; and the female tuberculosis building was converted to the surgical wards, operating rooms and radiology department in 1961. The hospital at the Indian School continued operation as the "Annex," retaining the dental clinic, central supply, medical records, a minimal care ward, and the outpatient department. On February 22, 1968, the medical records and outpatient departments were transferred to the campus at North 16th Street and East Indian School Road.

Full-time specialties in 16 fields, from surgery to peridontics, have been added by increments to the staff since 1949. A unit for chronic hemodialysis was begun in 1965 as a satellite of Good Samaritan Hospital and continues to be active. Pediatrics and surgery residency training programs were begun in 1964 and 1969, respectively, in conjunction with other local hospitals. A dental internship was started during the current year (1970). The interaction between the staff of the Phoenix Indian Medical Center (PIMC) and the area medical community is becoming more extensive.

Since the groundbreaking ceremony for the new 200-bed PIMC on June 22, 1968, the stimulus for improved health delivery to the southwestern Indians has been intensified. At this point, it seems appropriate to quote the concluding remarks from the article[2] of 36 years ago which expressed a firm conviction that the second Indian Hospital would serve an increasingly important function:

"That the last twenty years have witnessed striking changes in catering to the health needs of Indians on reservations is witnessed by the growth in the Salt River Valley of a little twelve-bed hospital to a modern institution of sixty beds. No small amount of this progress may be attributed to the intrepid spirit of those men and women actively participating—modern medicine men and women . . .

"With such spirit kindling it, the Phoenix Indian School Hospital is destined to arouse the support of the surrounding community and to have its good name borne beyond the confines of the Salt River Valley of Arizona into the country beyond."

These statements of 1934 were prophetic. They are also ones which we can comfortably reiterate as timely for the new 1970 Phoenix Indian Medical Center in predicting its future destiny.

Table 2

Full-time specialties at the Phoenix Indian Medical Center and time of addition.

1.	Surgery	1949
2.	Dermatology	1956
3.	Internal Medicine	1958
4.	Pediatrics	1959
5.	Radiology	1960
6.	Ophthalmology	1962*
7.	Urology	1962
8.	Anesthesiology	1962
9.	Pathology	1963
10.	Otolaryngology	1965*
11.	Physiotherapy	1966
12.	Orthopedics	1967
13.	Pediatric Surgery	1967
14.	Psychiatry	1970
15.	Obstetrics-Gynecology	1970
16.	Peridontics	1970

*During earlier years opthalmologists and otolaryngologists also served occasional intermittent assignments.

ACKNOWLEDGEMENT

The important contributions of Mr. Arthur Moore, Dr. B. Sedalak, Miss Laura Clark, Mrs. Norma Stevens, Mrs. Julia Porter, and other Indian Health Service and Bureau of Indian Affairs employees are gratefully acknowledged.

REFERENCES

1. Quebbeman, F. E.: **Medicine in Territorial Arizona.** Phoenix, Arizona Historical Foundation, 1966, pp 284-285.
2. Sloan, R. P.: The white medicine man becomes the Indian's friend. **The Modern Hospital** 43:41-44, 1934.

AGONAL ENTERIC INTUSSUSCEPTION REPORT OF FOUR CASES

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ABSTRACT

Four eases of agonal enterie intussuseeption oeeurring in two ehildren and two adults are presented. Although this entity has been reeognized by the autopsy pathologist for many years the laek of any reeent medieal literature referenees and its infrequent ineidenee makes it a noteworthy observation. The unfamiliarity with this lesion expressed by the younger staff physieians and resident pathologists further emphasises the need to review agonal enterie intussuseeption. Considered an uneommon finding in the pediatrie age group when writers eited an approximate ineidenee of 5% during the earlier twentieth eentury, its ineidenee may be even less frequent now. No speeifie deseription of adult agonal intussuseeption eould be found. Reeognition of this finding as an ineidental postmortem observation and divoreing it from the primary pathologieal proeess is essential. The probable psysiologieal meehanism of formation is postulated.

AGONAL ENTERIC INTUSSUSCEPTION

Intussuseeption has been reeognized for many years as a relatively infrequent eause of aeute abdominal surgieal emergeney, partieularly in the pediatrie age group.[1] A post-mortem eounterpart has also been deseribed as an oeeasional finding by the older anatomieal pathologists who wrote about "terminal" or "agonal" intussuseeption observed at the autopsy table.[2,3] Unlike the usual situation noted in 80% of the antemortem variety in older ehildren and adults, this entity appears to require no pre-existing loeal lesion or eondition. Indeed it tends to reeapjtulate the usual events of intussuseeption observed in the vast majority of eases oeeurring under two years of age refleeting perhaps, at least physiologieally, a return to neurologieal immaturity.

The emphasis in medical edueation over the past three deeades has been eorreetly direeted toward newer methodology and astounding teehnieal developments, while gross pathology and morphologieal anatomy have reeeived little attention. Consequently entities of infrequent oeeurrenee often represent a knowledge gap among younger physieians in general and resident pathologists in partieular. With this in mind four eases of agonal enterie intussuseeption oeeurring over a brief span of time in two ehildren and two adults are presented.

CASE REPORTS

Case 1: An eleven year old Indian female de-

veloped symptoms of an upper respiratory tract infection one week prior to admission, suddenly presented with signs of acute cerebral edema, lapsed into coma and expired after a two day hospitalization. Convulsive seizures were present for twelve hours prior to death. Autopsy gross and microscopic findings included diffuse bilateral bronchopneumonia, diffuse cerebral edema and three telescoping jejunal intussusceptions devoid of inflammatory reaction or infarction necrosis (Fig. 1).



Figure 1.
Three agonal enteric intussusceptions in an eleven year old female. Necrosis is lacking. Manual reduction is easily accomplished.

Case 2: A two year old male expired abruptly following a two day history of an upper respiratory tract infection. Administration of medications and exposure to toxins was denied by the parents. A brief generalized convulsion immediately preceded the terminal event. Interstitial pneumonitis with superimposed bronchopneumonia was diagnosed microscopically as the cause of death. Diffuse cerebral edema was also present. An incidental finding included the presence of three separate enteric intussusceptions of the mid and distal ileum, none of which demonstrated inflammation, vascular compromise or necrosis.

Case 3: A twenty-one year old male expired four days after admission with multiple traumatic injuries sustained in an automobile-pedestrian accident. At necropsy severe brain contusion with diffuse cerebral edema was present as the obvious cause of death. Six separate jejunal intussusceptions beginning approximately 12 cm. distal to the ligament of Treitz demonstrated no evidence of edema, lymphangiectasis or gangrenous hemorrhagic necrosis (Fig. 2). When longitudinally sectioned none of the intussusceptions demonstrated an etiological mechanism or indication of traumatic injury, and all were histologically normal (Fig. 3).

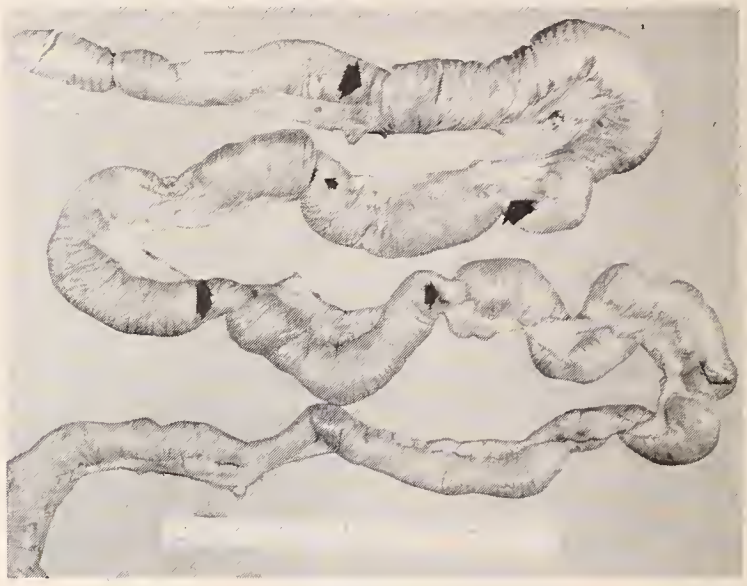


Figure 2.
Six agonal jejunal intussusceptions in a twenty-one year old male who survived four days following multiple traumatic injuries sustained in an automobile-pedestrian accident. The proximal portion (distal to the ligament of Treitz) is in the uper left hand corner.

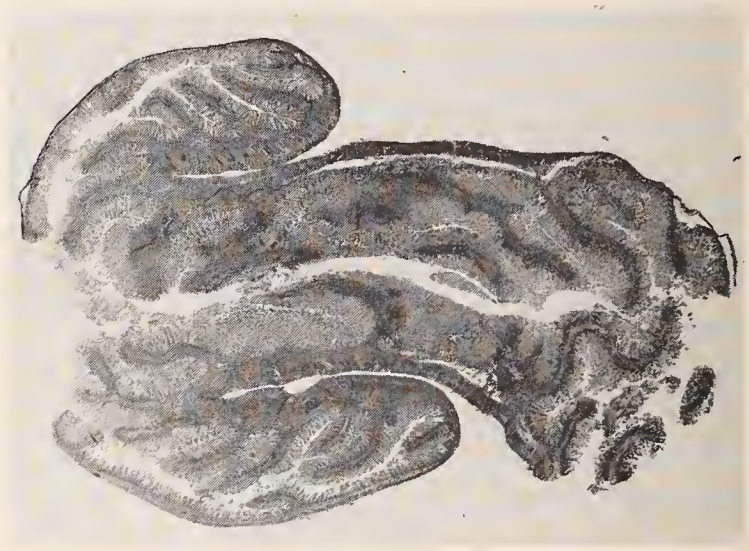


Figure 3.
Longitudinal section of one intussusception from Fig. 2 demonstrating normal intact jejunal mucosa, absence of lymphangectasis and vascular congestion, and no necrosis. (X4).

Case 4: A fifty-six year old female expired after a protracted terminal hospitalization for pulmonary adenocarcinomatosis. She lapsed into coma five days prior to her demise. At autopsy two 1 cm. cerebral metastases were found in the right frontal lobe and left parietal cortex, and a 4 cm. metastasis occupied the greater portion of the right occipital pole. Cerebral edema was not appreciated by gross or microscopic examination, and the brain weight was normal. A solitary agonal intussusception located 45 cm. from the ligament of Treitz demonstrated no specific

etiologieal mechanism, metastatic disease or degenerative reaetion (Fig. 4).



Figure 4.
Solitary agonal jejunal intussusception in a fifty-six year old female with pulmonary adenocarcinomatosis, three cerebral metastases and coma five days before demise.

DISCUSSION

The exaet frequeney of this finding is not statistieally defined but certainly eannot be great, although the older medieal literature eites an ineidenee of approximately 5%. The eoineidental oeeurrence of these four eases observed in 283 conseeutive autopsies over a thirteen month period seems unusually high with an ineidenee of 1.4%.

The lack of reactive inflammation, edema and hemorrhagic necrosis demands assigning a time of formation of these intussuseeptions near or perhaps even after the moment of somatie death. In the absence of any assoeiated gross lesions or pre-mortem evidenee of gastrointestinal tract hyperaetivity credenee is given to the neurogenie etiological theory. Mayo and Woodruff postulated uncoordinated peristalsis or antiperistalsis above or below the intussuseepted segment ereating asynehronous peristaltie waves meeting opposing waves subsequently resulting in a teleseoping phenomenon.[4] This would also explain the infrequent finding of retrograde intussuseeptions, of which variety there were none in the thirteen lesions manifested by these four patients.

A eommon denominator appearing in these otherwise dissimilar eases exists in the presence of significant central nervous system pathology. This takes the form of severe ecrebral edema associated with eonvulsive seizures and/or eoma in three patients and multiple cerebral metastases assoeiated with coma in one patient. One eannot restrain from postulating that perhaps a similar physiologieal malfunctioning of the autonomic innervation results in uncoordinated stimuli to the gastrointestinal traet.

A temptation exists to attribute the oeeurrenee of agonal enterie intussuseeption entirely to post-mortem reflex neurologieal aetivity. Attraetive as this simple premise appears at first, one is then at a disadvantage to explain its relatively infrequent ineidenee and to discount concurrent serious eentral nervous system pathology, as examplified in eaeh of these four eases, as purely coincidental.

Heretofore all referenees to this entity have noted the oeeurrenee in ehildren. In this small series children and adults are equally represented, as are males and females, and the ease demonstrating the greatest number of intussusceptions (six) is a previously healthy young adult male with lethal traumatie injuries.

SUMMARY

Agonal enteric intussuseeption may be charaeterized as an infrequent, ineidental autopsy finding in either children or adults. The lesions are small, being 2 to 4 em. in length, are often multiple, demonstrate no localized inflammation, edema or necrosis, are easily reducible and are not associated with any predisposing intraluminal, intramural or extrinsic lesion. Although the exact meehanism of formation remains unproven, dyssynchronous autonomic neural stimuli with simultaneous segmental mural museular relaxation during the agonal period present as the most plausible explanation. This lesion must be identified as an ineidental finding based on our present knowledge, although the presence of serious brain patho-physiology evideneed in each of these four eases implies a possible causal relationship.

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REFERENCES

1. Ravitch, Mark M.: Intussusception In Infants and Children. Pediatric Surgical Monograph Series. Charles C. Thomas Publishers, Springfield, Ill. 1959.

2. Kissane, John M. and Smith, Margaret G.: Pathology of Infancy and Childhood. The C. V. Mosby Company, St. Louis, Mo. p. 191, 1967.

3. Sahir, Otto: A Text on Systmie Pathology, Volume II. Grune & Stratton, New York. p. 933, 1959.

4. Mayo, C. W. and Woodruff, R.: Acute Intussuseeption. Arch. Surg. 43:583, 1941.

CLINICAL STATUS AND TOXICOLOGY OF ANALEPTIC DRUGS



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The analeptic drugs comprise a heterogeneous group of chemical compounds which have in common the potential to cause widespread stimulation of the central nervous system (CNS) and convulsions when administered in sufficient amounts. Representative members of this group of compounds include bemegride, caffeine, doxapram, ethamivan, nikethamide, pentylenetetrazol, picrotoxin, and strychnine.

These drugs are commonly called analeptics because in certain states of drug-induced depression they may exert an arousal or awakening effect characterized by an increase in depth and rate of respiration, a return of reflexes, and/or a reduction in the period of unconsciousness.

Clinical Status of Analeptic Drugs

Use as Antidotes in Drug-Induced CNS Depression — The CNS stimulants caffeine, nikethamide, pentylenetetrazol, and picrotoxin were introduced during the 1930's as analeptic antidotes for treating the comatose state caused by overdose of CNS depressant drugs. For years the use of analeptic drugs was considered to be the treatment of choice in the management of poisoning from barbiturates and other CNS depressants. Although in recent years a number of drugs (e.g.) bemegride, ethamivan, and doxapram) have been introduced as specific respiratory stimulants of value in barbiturate poisoning, each has proved to be merely another general analeptic agent.[1]

In the recent past, the use of analeptic drugs in the treatment of drug-induced CNS depression has been reappraised. On the basis of a number of clinical studies, the value of this antidotal therapy is now disputed. Investigators in Denmark,[2,3] as well as in the United States[4-7] contend that these chemical compounds do more harm than good as reflected in mortality statistics. They have found that the mortality rate from barbiturate poisoning is significantly reduced by rigid adherence to supportive measures aimed at restoration and maintenance of vital functions and by elimination of analeptic drugs from the treatment procedure. In addition, these investigators point out that

adverse effeets sueh as nausea and vomiting, hypertension, eardiae arrhythmias, taehyeardia, hyperpyrexia, posteoma psyehosis, eonvulsions and postietal depression are not seen in vietims of barbiturate poisoning managed solely by supportive therapy. It has become apparent that marked variations in sensitivity to the analepties due to individual variability and to the level of CNS depression make it diffieult to avoid adverse reaetions. During the 15-year period that the Seandinavian group diseontinued use of analepties and applied the physiologie approaeh to treatment, mortality from barbiturate poisoning was redueed from 20% to less than 2%.[2]

It has been demonstrated that analeptie drugs are ineapable of stimulating respiration and exerting an arousal effeet in vietims of severe barbiturate poisoning with profound CNS depression.[4, 8] While it is apparent that these drugs exert an analeptie aetion in patients who are not deeply eomatose, their use in this instanee is unneeessary and introduees the hazard of undesirable side effeets.[1]

It seems elear that restoration of respiratory funetion in the severely depressed patient ean be aehieved more reliably and more safely by meehanieal means than by analeptie drug therapy. The eonsensus today supports the view of the Seandinavian workers that analepties should not be used in the treatment of poisoning from barbiturates.[1, 4-7, 9-12] Indeed, therapeutie emphasis in the management of poisoning from all sedative-hypnotie drugs has shifted from desperate attempts to arouse the patient with CNS stimulants to an orderly if unspeetaeular regimen of supportive therapy.

Miscellaneous Uses of Analeptic Drugs — The analeptie drugs doxapram, ethamivan, and nikethamide have been reeommended for use as respiratory stimulants in the treatment of anoxie patients with hypoventilation seeondary to ehronie pulmonary disease sueh as bronehitis and emphysema. However, there is no reliable evidenee that these agents are of sustained value in the treatment of ehronie hypoxia resulting from pulmonary disease.[13] Indeed, it has been reported that the rise in minute volume of ventilation following analeptie treatment in emphysematous patients is assoeiated with a disproportionate inerease in oxygen eonsumption and a rise in arterial P_{CO_2}.[14]

Certain analeptie agents have been suggested for use in anesthesiology to faeilitate postanesthetie reeovery in surgieal patients in order to hasten arousal and return of proteetive pharyngeal and laryngeal reflexes. One drug employed for this purpose is doxapram, whieh is reputed to have a wider margin of safety between doses that produee respiratory stimulation and eonvulsions than the other analeptie agents. Although the drug is reported to produee a signifieant inerease in tidal volume and respiratory rate, the effeet of a single dose of the drug is of short duration (2 to 5 minutes) and it is not eonsistently assoeiated with inereased arterial oxygenation or with a deerease in hypereapnia (12). Moreover, its analeptie aetion is often aeeompanied by marked sympathomimetie effeets. Many elinieians believe that postoperative respiratory depression is best treated by manual or meehanieal methods of ventilatory assistance.[12]

Doxapram has been employed to differentiate between postanesthetie eentral respiratory depression and peripherally-indueed respiratory depression due to residual effeets of neuromuseular bloeking agents. Needless to say the proeedure requires rigid eontrol of the analeptie dosage regimen in order to avoid the potential hazards assoeiated with an overdose of the CNS stimulant. Eleetrie nerve stimulation is eonsidered to be a more speeifie diagnostie aid to test for residual eurarization in the postanesthetie period.[4]

It is apparent from the above presentation that analeptie drugs have little elinieal applieation in modern medieine, espeeially in the treatment of drug-indueed eentral nervous system depression. One of the few valid uses of these drugs is for the differential diagnosis of eonvulsive disorders based on EEG aetivation. The drugs usually employed for this purpose are pentylenetetrazol and bemegride. Subeonvulsive doses of one of these analepties alone or with flashing light will often aetivate latent epileptogenie foei.[15]

Toxicology of Analeptic Drugs

Adverse reaetions assoeiated with subeonvulsive doses of the analeptie drugs are primarily due to eentral nervous system stimulation and inelude nausea and vomiting, sneezing, eoughing, laryngospasm, hypertension, hyperpyrexia, taehyeardia and eardiae arrhythmias. Exeessive doses of these drugs eause museular tremors or twitehing and elonie-tonie eonvulsions whieh are followed by postietal depression.[4]

Strychnine warrants special consideration from a toxicological standpoint since it is involved in human poisonings. Children inadvertently ingest household products containing strychnine such as rodenticides and sugar-coated, proprietary cathartic and tonic tablets, the strychnine content of which may vary between 0.5-1.3 mg per tablet.[16] Serious poisoning with strychnine has been reported in children with doses as small as 15 mg. The fatal adult oral dose is probably in the range of 60 to 10 mg.[17]

Strychnine is rapidly absorbed when taken orally and the onset of toxic symptoms occurs within 10 to 30 minutes. Often without warning, the patient falls in a violent convulsion, but usually there are prodromal symptoms such as stiffness in face and neck muscles. A transient clonic phase is quickly followed by spasm of all skeletal muscles; the stronger muscles dominate and the body typically arches in hyperextension (opisthotonos). Because the muscles of respiration are involved in a sustained spasm, breathing ceases and deep cyanosis appears. Consciousness is retained during the convulsion, which is painful. As many as 10 convulsions, separated by intervals of 10 to 15 minutes may be experienced, but death often occurs between the second and fifth paroxysm. Death is usually due to asphyxia from respiratory arrest during or between convulsions.[17, 18]

Treatment is designed primarily to prevent convulsions and thus to protect medullary centers from excessive stimulation and from anoxia. Ingestion of activated charcoal suspension in a dose of about 5 times the estimated amount of strychnine taken is very effective in binding the poison and preventing its gastrointestinal absorption.[19] In the event convulsions have ensued, seizures should be controlled by intravenous administration of a short-acting barbiturate such as pentobarbital sodium. After convulsions and reflex irritability have been suppressed, gastric lavage can be safely performed with a potassium permanganate solution 1:5000. A suspension of activated charcoal should be administered by gavage before removal of the gastric lavage tube. The patient should be protected from excessive sensory stimulation by keeping him in a comfortable, warm, quiet and darkened room.

Recently, Teitelbaum and Ott,[20] reported a new approach to the treatment of strychnine poisoning which resulted in a favorable outcome of 2 poisoning cases in which lethal doses of strychnine were ingested. Their treatment is based on the following facts: strychnine promptly appears in the urine in the unchanged form following ingestion;[18] more than 20% of an ingested dose of the poison is excreted unchanged

STATISTICS OF 2187 POISONING CASES REPORTED IN ARIZONA DURING JANUARY DECEMBER 1970

AGE:		PERCENT
897 involved under 5 year age group		41.0
119 involved 6 to 15 year age group		5.4
658 involved 16 to 30 year age group		30.1
283 involved 31 to 45 year age group		13.0
180 involved over 45 year age group		8.2
50 were not reported		2.3
NATURE OF INCIDENT:		
997 accidental		45.1
1046 intentional		48.5
144 unknown		6.4
OUTCOME:		
2098 recovery		95.9
89 fatal		4.1

CAUSATIVE AGENTS			
Internal Medicine		Number	Percent
Aspirin		385	14.5
Other Analgesics		145	5.5
Barbiturates		300	11.3
Antihistamines		64	2.4
Laxatives		16	.6
Cough Medicine		12	.5
Tranquilizers		397	15.0
Others		573	21.6
	Subtotal	1892	71.4
External Medicine			
Liniments		17	.6
Antiseptics		12	.5
Others		3	.1
	Subtotal	32	1.2
Household Preparation			
Soaps, Detergents, etc.		10	.4
Disinfectants		35	1.3
Bleach		47	1.8
Lye, Corrosives, Drain Cleaners		23	.9
Furniture & Floor Polishes		14	.5
	Subtotal	129	4.9
Petroleum Distillate			
Kerosene		8	.3
Gasoline		24	.9
Others		25	.9
	Subtotal	57	2.1
Cosmetics	Subtotal	18	0.7
Pesticides			
Insecticides		57	2.2
Rodenticides		9	.3
Herbicides		3	.1
	Subtotal	69	2.6
Paints, Varnishes, Solvents, etc.	Subtotal	31	1.2
Plants	Subtotal	44	1.7
Miscellaneous	Subtotal	195	7.4
Unspecified	Subtotal	181	6.8
	TOTAL	2648*	100.0%

*The total number of causative agents exceeds the actual number of poisoning cases, since in certain individuals poisoning incidents more than one agent was involved.

within 24 hours;[15] 70% of the total excretion of the drug occurs in the first 6 hours;[20] the drug is not significantly protein bound (20). From these facts the authors concluded that therapeutic measures which increase renal clearance are clearly indicated in strychnine poisoning. Thus, in the treatment of their patients, they instituted forced diuresis with mannitol and peritoneal dialysis in addition to the traditional regimen for the management of strychnine intoxication that has been described above. The authors reported a dramatic decrease in morbidity in their poisoning victims. Typically, 24 hours of intensive therapy with drugs (physiological antagonists), respirator, and maximal nursing care are required before the crisis in strychnine poisoning is resolved.[20] In contrast, the 2 patients treated by Teitelbaum and Ott required only 6 hours of therapy despite the large doses of poison ingested. Since this investigation involves only 2 patients, additional experience is needed to confirm the results of this study and to establish the value of forced diuresis and peritoneal dialysis in the management of strychnine poisoning.

REFERENCES

1. Mark, L. C. and Papper, E. M.: Changing Therapeutic Goals in Barbiturate Poisoning, Pharmacol. Physicians 1:1-5 (March) 1967.
2. Clemmesen, C. and Nilsson, E.: Therapeutic Trends in the Treatment of Barbiturate Poisoning—The Scandinavian Method, Clin. Pharmacol. Therap. 2:220-229 (March-April) 1961.
3. Myschetsky, A.: Shortening of Coma Duration in Narcotic Poisoning, Int. Anesth. Clin. 4:351-358, 1966.
4. Mark. L. C.: Analeptics—Changing Concepts, Declining Status, Am. J. Med. Sci. 254:296-302 (September) 1967.
5. Setter, J. G., Maher, J. F., and Schreiner, G. E. P.: Barbiturate Intoxication, Arch. Int. Med. 117:224-236 (February) 1966.
6. Dobos, J. K., Phillips, J., and Covo, G. A.: Acute Barbiturate Intoxication, J. Am. Med. Assoc. 176:268-272 (April 29) 1961.
7. Hadden, J., Johnson, K., Smith, S., Price, L., and Giardina, E.: Acute Barbiturate Intoximation—Concepts in Management, J. Am. Med. Assoc. 209:893-900 (August 11) 1969.
8. Adriani, J., and Arens, J.: Use of Antagonists in Drug-Induced Coma, J. Am. Med. Assoc. 179:752-758 (March 10) 1962.
9. Shapiro, F. L., and Smith, H. T.: The Treatment of Barbiturate Intoxication, Mod. Med. 37:104-109 (April 21) 1969.
10. Munsat, T. L.: Acute Barbiturate Poisoning, p. 72-77 In Management of Medical Emergencies, 2nd Ed., ed. J. C. Sharpe and F. W. Marx Jr., McGraw-Hill Book Co., New York, 1969.
11. Done, A. K.: Pharmacologic Principles in the Treatment of Poisoning, Pharmacol. Physicians 3:1-10 (July) 1969.
12. Anon.: Doxapram (Dopram)—An Analeptic, Med. Letter Drugs Therap. 11: 7-8 (January 24) 1969.
13. Bickerman, H. A. and Chusid, E. L.: The Case Against Use of Respiratory Stimulants, Chest 58:53-56 (July) 1970.
14. Cherniak, R. M. and Young, G.: An Evaluation of Ethamivan as a Respiratory Stimulant in Barbiturate Intoxication, and Alveolar Hypoventilation in Emphysema and Obesity, Ann. Int. Med. 60:631-640 (April) 1964.
15. Esplin, D. W. and Zablocka-Esplin, B.: Central Nervous System Stimulants I, pp. 348-357 In Pharmacological Basis of Therapeutics, 4th Ed., ed. L. S. Goodman and A. Gilman, Macmillan Co., New York, 1969.
16. Thienes C. H. and Haley, T. J.: Clinical Toxicology, Lea and Febiger, Philadelphia, Pennsylvania, 1964, p. 54.
17. Gleason, M. N., Gosselin, R. E., Hodge, H. C., and Smith, R. P.: Clinical Toxicology of Commercial Products, 3rd Ed., Williams & Wilkins, Baltimore, 1969. pp. 214-217.
18. Cotton, M. S. and Lane, D. H.: Massive Strychnine Poisoning—A Successful Treatment, J. Miss. State Med. Assoc. 7:466-468 (September) 1966.
19. Picchioni, A. L.: Activated Charcoal—A Neglected Antidote, Pediat. Clinics N. Am. 17:535-543 (August) 1970.
20. Teitelbaum. D. T. and Ott, J. E.: Acute Strychnine Intoxication, Clin. Toxicol. 3:267-273 (June) 1970.

THE ROLE OF PRIVATE ENTERPRISE IN CHANGING THE HEALTH CARE DELIVERY SYSTEM



MR. JACK H. SEITER

An address by Mr. Jack H. Seiter, National Vice President, Bayly, Martin & Fay, Inc., Los Angeles, California, 3200 Wilshire Blvd. 90010. To the National Council of Health Care Services, Washington, D. C. December 8, 1970.

30 years ago I became a group insurance representative for a major eastern life insurance company. My first assignment was to enroll a group of laundry workers in a plan which provided:

$4.00 per day for hospital room and board up to a maximum of 31 days—

$20.00 maximum reimbursement for other hospital charges, and a $75.00 maximum surgical schedule.

The cost was $1.10 monthly, paid entirely by the employee. The increases and additions in benefits from that plan to those offered today are staggering, as are the cost of current programs. Yet strangely, two things have changed very little. First, the system employed to deliver health care has changed only slightly . . . (for example, in the "old" days, doctors made house calls), and second, the basic operational method of the group insurance industry which provides the major portion of protection in the United States remains relatively unchanged from that day to this.

Before we become too critical, however, or pay too much attention to uninformed campaign statements, it is important to recognize the fact that we in the United States have the finest health care system the world has ever seen. The entire accident and health business represents probably the largest industry in the U. S. and we are unquestionably the world leader in the development of medical and surgical procedures and equipment. This tremendous system for delivery of care was created by private enterprise and is still superior to government-imposed programs in any other country.

I am sure that everyone connected with this industry is in favor of improvement in the system of delivering health care to our citizens. As a matter of fact, changes in the method of delivering health care have been going on for years. While the change has been gradual and not fast enough to satisfy everyone, it is occurring and in my opinion, it demonstrates again that the free enterprise system of America can and will solve the health care problem of our citizens, thus avoiding the catastrophe of government-imposed programs such as those which are in effect today in England.

Many of you are more familiar than I with the prepaid health care programs already in effect and operating, of which the most prominent may be the Kaiser Health Plans. Not so well known are many other projects including ours which are working toward the same objective as Kaiser but employing a different basic approach. I would like to explain the background of this effort—the obstacles we encounter—our progress to date—and our plans for the future.

While many past experiences may have contributed to our thinking, the story really begins with our association with the food and drug industries in Southern California some 4½ years ago. At that time we purchased the business of an actuarial firm which worked with the food and drug industries in their labor negotiations. The

negotiations had led to the establishment of a number of trust funds providing a variety of health, welfare and pension benefits. Most of the health and welfare plans provided the covered participants with a choice of benefit programs. The choice usually provided was between an insured, indemnity program and the Kaiser Health Plan. Approximately 40% or 40,000 people chose the Kaiser Plan and the remaining 60,000 employees chose the indemnity approach. The 40% participation in Kaiser was far higher than we would normally anticipate in dual choice programs and was achieved primarily because certain of the union leaders campaigned vigorously in that direction.

From such experiences we have learned one very important lesson. It is essential in approaching any group of employees to offer alternative benefit programs. Only in very rare cases would a prepaid medical group plan be accepted by all eligible participants. I doubt that even a majority of white collar workers and/or executive type employees could be convinced to give up their right to a free choice of their personal physician.

You must remember that the insurance industry and the American Medical Association have preached the free choice philosophy so many years that it is deeply ingrained in many people. We believe that this is one of the reasons that so many well-intentioned prepaid medical group programs not offering the alternate benefits have failed.

The "Harvard Experiment" will succeed only because it is an alternate group practice program. It has been offered to participants of some Blue Cross-Blue Shield groups and to home office employees of certain life insurance companies. It is interesting to note that only 30% of the employees of Prudential's Boston home office enrolled in the Harvard program. In spite of the efforts of government and/or private enterprise, to date, a great deal more must be done before the public will willingly accept a new delivery of health care through prepaid medical group practice.

The second development in our effort toward prepaid medical group practice began when it was realized that economies could be effected under the indemnity portion of the program with the payment of these same indemnity type benefits being made directly from the trust fund assets rather than through the facilities of an insurance company. As a consequence, all of the food and drug trust funds terminated their insurance contracts. This action permitted the trustees some degree of flexibility in adding or changing benefits as they felt it desireable, without immediate and substantial cost increases. It also became possible to contract directly with medical groups other than Kaiser, as well as dental and vision care groups since these latter benefits are now included as the result of subsequent negotiations.

Part of the development of contracting with these groups was also occasioned by the fact that Kaiser was, in certain areas, filled to capacity and could not accept new groups in those facilities.

During the years over which these changes took place, certain things came to light. It became obvious that prepayment capitation contracts had built-in restraints, particularly in the hospital utilization area, as compared to the experience under fee-for-service contracts. This has led to the development of prepaid capitation contracts with physician groups where the physician group agrees to pay for necessary hospital coverage for its patients. Our experience with these contracts indicates a sharp reduction in the number of hospital admissions as well as a reduction in the length of the average hospital stay.

Perhaps we are achieving the desired result of bringing preventive care to these participants enrolled in the group practice programs. As you know, the present system of delivering health care concentrates over 90% of its effort on curing the sick and less than 10% on prevention.

Recently the Health Insurance Institute found from a study conducted by the Massachusetts General Hospital that about three out of five hospitalizations could have been avoided by preventive measures. Proper preventive measures may also reduce time lost from work because of illness. Studies of this time loss indicate this to be the most expensive fringe benefit of the average corporation. There is evidence to indicate that a reduction of 33⅓% to 50% of time lost by illness would offset the entire cost of a corporation's health program. Group practice plans must provide and stress the value of preventive medicine. This is one of the strongest arguments to the public, leaders of labor unions and employ-

ers for changing from conventional plans of today.

As the value of prepaid group practice plans became obvious and since the trustees, both management and labor, were truly concerned with bringing the best possible medical care to the beneficiaries, they expanded the programs in various directions. More contracts were consummated with physician groups — and from trust fund assets, dental, psychiatric and predictive clinics were built. These were not entirely successful . . . they ran into various problems.

Many of the participants in these plans lived too far from the facility. In the case of the predictive clinic, when results were forwarded to the employee's physician, they were received with something less than enthusiasm and many times ignored. It may be that we expected too much from the doctors. Certainly it helps to point up the second major area in which so much remains to be done before prepaid medical group practice will be a complete success.

While we have the largest, finest group of physicians in the world today, it must be realized that these men were educated, trained and have existed under a system in effect for many years. They have observed the impact of socialized medicine on doctors in foreign countries and they have, through their various associations, fought attempts at both State and Federal levels to insert socialized programs in the U. S. They must be convinced that we propose to establish these improvements in the health care delivery system through the free enterprise system whereby they will control their own destiny and not through legislation that might be only the first in a series of such moves leading to socialized medicine.

Further, it must be realized that private practice and prepaid group practice are two entirely different things. Group practice requires a great deal of sound business management. Very few physicians are prepared to properly assume this responsibility. Most will find it necessary to seek help from outside the medical field and such help is not yet readily available. All of this has become apparent to us in our desire to expand our prepaid group practice programs throughout the state of California. We are making progress but it is necessarily slow. Unfortunately, the desire for change has preceded the development of the tools and education necessary to make such a transition. Any attempt at legislation to force such a change quickly could result in a disaster. It is also clear that there is no real need for large amounts of financial assistance from the Federal Government except for Medicare and other public assistance plans. Almost all necessary financing of medical or hospital facilities can be obtained from normal sources, or, as in our situation, from loans from pension funds covering the same beneficiaries.

The trustees consider this type of investment both sound and proper. As a matter of fact, the type of legislation really needed would be that which would remove the existing State and Federal laws which tie the hands of the insurance companies and others like ourselves most interested in participating and helping in moving ahead in the improvement of our delivery of health care.

While on the subject of legislation, the need for careful and sound development of any change in the delivery of health care and the necessity of cooperation by all parties is evident in California today. Let me refer briefly to the Medi-Cal program in California. Here is a program which threatens to bankrupt the state, is rejected by more and more providers of health care and if a recent announcement comes true, all nursing home care in the state will withdraw from the program, effective February 1, 1971. This is rapidly reaching the proportion of a fiasco. This program affects only a segment of the population of the State of California. Imagine if you can, this same situation applying to all citizens of the United States simply because ill-conceived or politically-inspired programs are passed as Federal legislation. Our experience proves that changes can and are being made voluntarily and on a basis which results in real cooperation between all the various providers of health care. We are receiving dozens of inquiries from those who wish to cooperate and don't know how or where to start. These people need sound guidance to avoid costly disasters. To those who feel progress in changing our system of delivering health care is not fast enough, I suggest the following:

1. Approach the solution of the problem on the basis that the change can best be made by those in private enterprise concerned with health care delivery and with the en-

couragement and support of all levels of government.

2. Since it is vital, in our opinion, to reach a great many people with programs which offer a choice, the government must permit the insurance companies and the Blues to work in concert to develop those programs. It is imperative that this be done without threat of Federal interference and prosecution. The Harvard Plan proves the desirability and necessity of this approach, since without this cooperation from the insurance companies and the Blues, it is doubtful that this fine program would have had any chance for success.
3. With this assurance that participants will be available for group practice facilities, I think that there will be rapid response by health care providers.

Our own experience proves that we can interest health care providers and that they will respond when we can show that a sufficient number of potential participants are available within one practical geographical area.

At Bayly, Martin & Fay, we have found it necessary to form a corporation which will offer all prepaid services to our many clients. It can contract for these services and then offer them as an alternate plan to our hundreds of accounts, both trust funds and group insurance policyholders. This solves both the problem of offering these services to the very small groups who have little chance of making direct contracts, and of combining many groups to bring sufficient participants to any one organization in group practice.

At this point in time, we are involved with groups covering 250,000 employees and their families. Approximately 75,000 participate in the Kaiser Plan. Another 10,000 participate in prepaid group practice programs for medical and hospital, dental or vision care services.

As new group practice facilities become available, the number covered by this system of delivering health care will also increase. How rapidly this occurs will depend upon the future availability of the facilities and the desire of the participants to change from a system to which they have become accustomed.

For our own part, we are committed to dual choice programs. We are determined to move ahead not only in California but in certain additional states to bring prepaid group practice programs to groups of employees and their families. Additionally, we are working in the field of preemployment physicials and multi-phasic screening. We are considering a program of prepayment to a group practice organization for the medical portion of Workmen's Compensation coverage. Such a program might be very compatible with a system of providing the other health care coverages. All of this planning and effort is the result of our being a part of a highly competitive free enterprise system. I think it demonstrates clearly that change is occurring. It will continue at a rate which will be determined by the acceptance of this type of health care delivery by the public and the availability of proper facilities.

For those of you who are considering entering this field, we have the following advice:

1. You must establish a physician group under a well organized plan in which each agrees in advance to the distribution of the work and the division of the income. Our experience indicates that groups operating on a fee-for-service basis tend toward substantially higher costs to the subscribers, thus losing their competitive position.
2. Preventive medical procedures and elimination of overutilization of hospital facilities is vital.
3. Since you have no sales force, join with those presently offering plans covering very large groups. Remember that it is doubtful that more than 15% of that portion of the group in your geographical area will initially adopt your plan.
4. Provide attractive sales material explaining your services and facilities, keeping in mind that each new person entering the total group will make a choice between the programs offered him. The Harvard Plan, for example, is attracting 50% of all new employees entering the Prudential's Boston Home Office.
5. Seek acceptance of your program from Federal authorities for use by Government employees. This group represents an ever increasing market in many localities.

There should be no doubt that there is great pressure to change the method of delivering health care in the United States. We intend to be a part of the new system. I hope you will join us!



MONTE MEETS HIS NEW BOSSES SECRETARY RICHARDSON AND PRESIDENT NIXON

MERLYN K. DUVAL, JR., M.D., GOES TO WASHINGTON

Monte DuVal adopted Arizona in 1963 after he was selected to organize and manage the University of Arizona College of Medicine. He has been highly successful in bringing the medical school to a high level of excellence particularly because of his ability to recruit an outstanding faculty, promising students, and to enlist considerable financial support from both private and governmental sources. *Arizona Medicine* had been enhanced by his monthly communications and has also served as one of Dr. DuVal's means of communication with the doctors of Arizona.

Dr. DuVal's natural abilities were recognized as an undergraduate at Dartmouth University, as a medical student at Cornell University, and as a House Officer at New York Hospital. He served in the U.S. Navy during World War II, became assistant professor, then professor of surgery at the University of Oklahoma Medical Center in 1956; remaining there until 1963.

HEW Secretary, Elliot Richardson, with the endorsement of the American Medical Association has now named Monte DuVal to HEW's top health position to succeed Dr. Roger E. Egeberg who will become a Special Assistant to President Nixon.

This is no easy assignment to be the man who must succeed in bringing order from controversy in the present problems of health, education, and welfare in the United States.

We wish the DuVal family every success in Washington. They have a high mission and are undoubtedly sacrificing personal desires in order to serve their country. May their endeavors in our behalf be eminently successful and may their eighteen month leave of absence bring them back to Arizona!

John R. Green, M.D.
Editor

Editor's Page

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CAMPBELL'S SOUPS IN DIABETIC DIETS*

RECOMMENDATIONS FOR PLACING CAMPBELL'S SOUPS* INTO EXCHANGE LISTS

* These recommendations are based on a *one cup portion* when prepared according to directions on the label. If milk is used in the preparation, use part of your daily requirement.

Exchange Substitution for 1 Bread and ½ Fat

Tomato
Tomato, Bisque of
Tomato Rice, Old Fashioned

Exchange Substitution for ½ Bread and ½ Fat

Asparagus, Cream of

Exchange Substitution for 1 Meat and 1½ Bread

Hot Dog Bean
Split Pea with Ham

Exchange Substitution for ¼ Meat and ½ Bread

Chicken Gumbo
Chicken Noodle

Campbell's Soups are appetizing and enjoyable and, because of the many varieties available, offer your diabetic patients the opportunity to plan and enjoy more interesting and appealing meals.

*To obtain copies of "Recommendations for Placing Campbell's Soups Into Exchange Lists," suitable for distribution to patients, write to Campbell Soup Company, Dept. 300, Campbell Place, Camden, N.J. 08101.

There's a soup
for almost every patient and diet
...for every meal
and, it's made by *Campbell*

President's Page



LEGISLATIVE ACTIVITIES

For the past two decades the role of legislation in the health field has progressively increased. At first many physicians felt that they were above politics and did not want to be involved. Our attitudes and position on most health legislation was inflexible and we gained the reputation of being against any and all legislation affecting health care services. Experience has demonstrated that we lost friends and status by not being willing or able to participate in the legislative process. Today we are actively involved, individually and collectively, in proposing and working for legislation affecting our profession.

The Arizona Medical Association has had an active legislative committee for years. However, we were crisis oriented and did little to develop a continuing and productive relationship with our legislators. This year we approached the Legislature with the attitude of how our Association could best serve the legislator and public with information and advice. Our representative, Mr. Gary L. Barnett, has been available to respond to any request. Liaison with the legislature has greatly improved and our Association has been a vital factor in specific areas of legislative concern.

During this just completed session of the Legislature a Statute of Limitations and Confidentiality of Hospital Committee Records was also signed into law. Other legislation of interest to the physicians which passed during this session include, four different bills amending the Medical Practice Act to standardize the fee for application of licensure, modernizing the examination to comply with current medical school curriculum, providing reciprocity endorsement for foreign graduates and providing for medical incompetence as grounds for unprofessional conduct and providing immunity from suit for physicians who report to the Board of Medical Examiners, knowledge of unprofessional or unethical conduct on the part of their confreres. Also, signed into law was a bill to provide immunity for services on a utilization review committee, a child hearing evaluation bill, and minors consent for drug treatment, V.D. treatment and rape examinations.

Legislative endeavors to provide for patient records to be available upon demand, and triplicate prescription among others were successfully stopped during this session.

We should continue our present legislative activities and place increased emphasis on providing honest and factual service to the legislators. We also need to have each member be more concerned about health legislation, and more willing to play an active role in furthering the goals of our profession.

James L. Grobe, M.D.
President



THE CHARTER CLASS OF 1971

Four years ago this spring we selected the first class to be admitted to the new College of Medicine. ARIZONA MEDICINE carried a complete description of the class, including photographs of the class members, in its September 1967 issue. Summarized briefly, there had been approximately six hundred applicants for admission to the first class, less than one-fourth of whom were residents of Arizona. When the screening process was finished, and the top thirty-two had been picked, their aggregate profile revealed the following. Twenty-eight were residents of the state; two came from California and one each came from Utah and Nevada. Twenty-seven had received all or a major part of their education in Arizona — thirteen each at Arizona State University and the University of Arizona and one at Northern Arizona University. Twenty-six were men and six were women.

Over the ensuing four years, four of the original thirty-two left the Medical College, for one reason or another. Three of these four were girls. Two students were subsequently accepted into the College by transfer — thus providing a class of thirty at the time of graduation.

It is hard for many of us to realize that, even as this issue of ARIZONA MEDICINE is published, the Class of 1971 has completed its work; its members have already received their M.D. degrees and are now ready to begin their first year of graduate education. For most, this will be an internship although some will be going directly into the first year of residency training as part of a rapidly growing national trend. In this regard, twenty-eight of our thirty students received their assignments through participation in the National Intern and Resident Matching Program. It is of interest that eighteen of the twenty-eight received their first choice through the matching plan, and another four were awarded either their second or their third choices.

One of the questions most frequently asked of us relates to the type of graduate training that is being selected by the graduating senior. Our experience does not suggest any new patterns — on the contrary, it seems to be very stable. The most popular choice remains Internal Medicine — selected by eight of our graduates. Seven selected a rotating internship. Five each chose to take theirs in Pediatrics and Obstetrics-Gynecology, while four will be starting in Surgery. One is going directly into residency training in Radiology.

If geography is the reference point, Arizona remains a winner. Nineteen of the class are remaining in the state. Fourteen have decided to remain at the Arizona Medical Center for their training; the remaining five will be in Phoenix — three at St. Joseph's Hospital and one each at Good Samaritan and Maricopa County General Hospital. Four are going to California; three to Texas, and one each to Colorado, Louisiana, New York and Oregon. If past is prologue, the high retention rate in Arizona would seem to suggest that we're going to contribute nicely to a net gain in physicians for the state through this class. (While on this aspect of the question, it is a source of great satisfaction that the University filled all of the internship and residency positions it is offering during the 1971-72 academic year. They were twenty-three in number; nine in Internal Medicine, six in Pediatrics, five in Surgery and three in Obstetrics-Gynecology.)

Sentiment aside (if that were possible with this first class) we've all been greatly stimulated by the passage of this first class through the school. But if there is a tribute — it is to the class itself. Each of its members made a choice. They could have gone to established schools but they cast their lot with us. We were incomplete and untried. Most important of all, there were no upperclassmen in front of them to serve as "living proof" that the program was valid and would produce a physician. So, even as we extend our congratulations to the members of this class so also do we acknowledge our indebtedness to each of them.



Topics Of Current Medical Interest

THE ARIZONA HEART INSTITUTE

The Arizona Heart Institute, located in the East Wing of St. Joseph's Hospital and Medical Center, Phoenix, will open on a limited basis the first week in August, Sister Mary dePaul Oberti, executive director of St. Joseph's announced Thursday, May 6.

Arizona Heart Institute, located entirely on the second floor of the East Wing, will concentrate in the areas of diagnosis and treatment of diseases afflicting the blood vessels and heart.

Taking part in a press conference to introduce Dr. Edward B. Diethrich, Medical Director of Arizona Heart Institute, and his plans for the new facility were Sister dePaul and T. Abner Huff, administrator of St. Joseph's.

Dr. Diethrich, Assistant Professor of Surgery, Baylor College of Medicine, Houston, said "Although we call this a Heart Institute, we're actually as interested in arterial diseases anywhere in the body as we are in coronary disease itself or valvular disease of the heart or congenital heart disease."

He stated, "There is no cardiovascular institute in the entire Southwest with the organizational structure designed with the purposes we have in mind." While he does not necessarily intend to duplicate the type of cardiovascular program with which he has been working in Houston, Dr. Diethrich said he will certainly call upon his experience there in designing, constructing and promoting an institute for diagnosis and treatment, "similar to the tremendous program that has developed in Houston over the past decade."

Dr. Diethrich said he plans to be able to catheterize patients from a diagnostic standpoint as early as the first week in August. The entire catheterization laboratory, the non-invasive laboratory, exercise electrocardiographic laboratory and the peripheral arteriography laboratories will not be open and ready for operation until approximately Nov. 10.

"But using temporary facilities, we will be able to perform all of these functions beginning somewhere around the first week of August," he noted.

The anticipated opening of the operating rooms, coronary care unit and cardiovascular intensive care unit is Sept. 15.

"While the institute will be serving the local Phoenix community its goals are much, much broader, than this," the Medical Director said. "We are interested in developing some of the most sophisticated techniques for the early diagnosis and treatment of the serious diseases that can afflict the blood vessels and heart. We would anticipate the programs we are proposing would be beneficial to people throughout the entire Southwest. And I would certainly hope that this would become a large referral center for patients with cardiovascular disease from anywhere in the U.S. and as is our experience in Houston, even on an international basis."

Architect for the Arizona Heart Institute is Varney, Sexton and Sydnor. Contractor is Kitchell Contractors.

ANNUAL MEETING HIGHLIGHTS

HONOURING NELSON C. BLEDSOE, M.D.



THE YOUNGEST AND THE OLDEST — RICHARD O. FLYNN, M.D. (1969) AND NELSON C. BLEDSOE, M.D. (1933).



THE PAST-PRESIDENT'S LUNCHEON — (L TO R) DR. YOUNT (1962), DR. CRAIG (1957), DR. THOENY (1954), DR. DUDLEY (1968), DR. MELICK (1959), DR. FLYNN (1969), DR. BLEDSOE (1933), DR. JARRETT (1966), DR. BREWER (1964), DR. THOMPSON (1955), DR. STEEN (1963), DR. UTZINGER (1943).



DR. LANDEEN HAPPILY ACCEPTS HIS PAST-PRESIDENT'S PLAQUE FROM THE NEW PRESIDENT DR. GROBE.



"WILL MRS. SATTENSPIEL PLEASE STAND UP?"

C. HERBERT FREDELL, M.D. RECEIVES THE 1971 COMMUNITY SERVICE AWARD FROM DR. GROBE.





MRS. J. BRUCE TUCKER PRESENTS DR. DU VAL AND AMA-ERF CHECK FOR $14,353.63.

IFTY-YEAR CLUB AWARDS MADE BY DR. GROBE



MURL E. FULK, M.D.



ARCHIE E. CRUTHIRDS, M.D.



DUKE R. GASKINS, M.D.



MRS. LEWIS WINTER BEGINNING TO ENJOY THE STEAK FRY

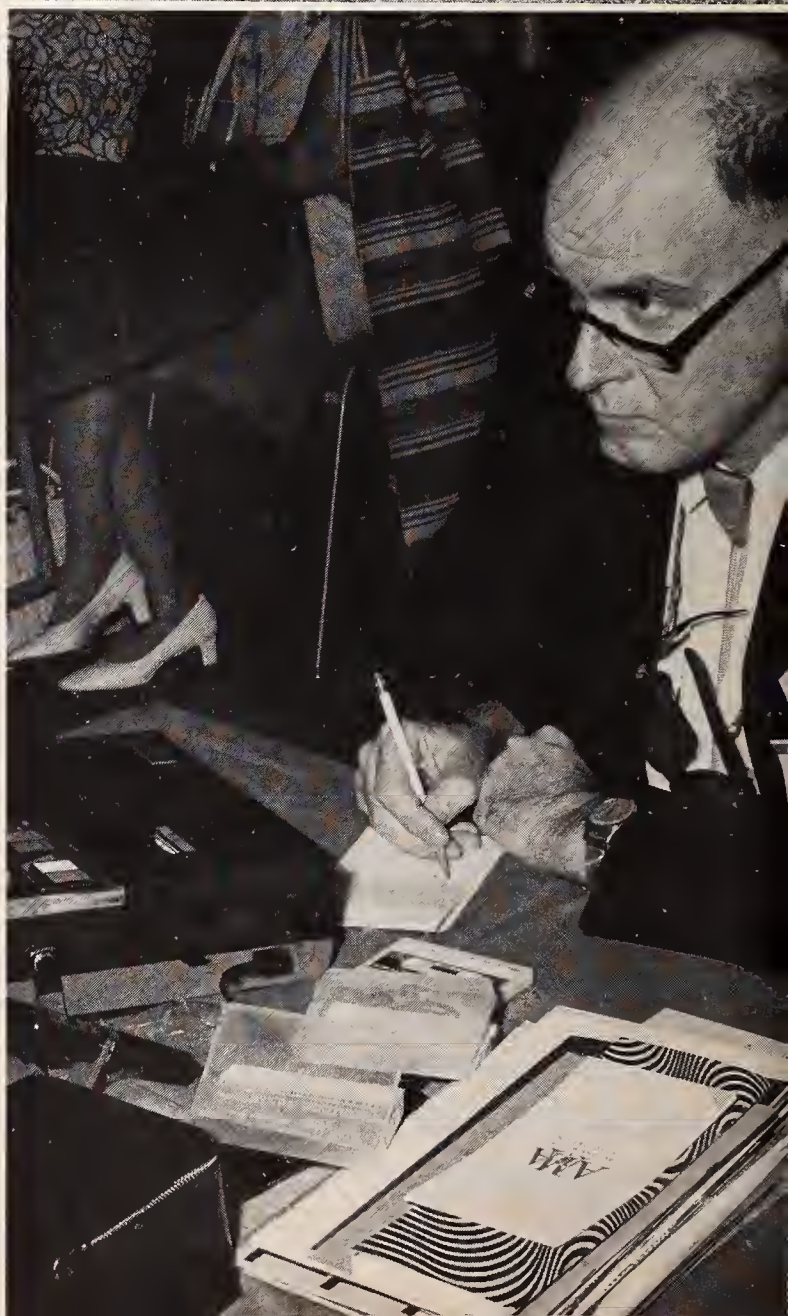
GUESS WHO TEES OFF.



DR. THURMAN, A STUDY IN CONCENTRATION

DR. FINNEY WELCOMES THE HOUSE OF DELEGATES







DR. LANGSTON, MRS. & DR. GROBE CHAT WITH REPRESENTATIVE SAM STEIGER AT THE ArMPAC BANQUET

DON V. LANGSTON, M.D. ArMPAC BOARD CHAIRMAN WELCOMES





DR. JARRETT, DR. CLOUD AND MRS. CLOUD CONTENTED AFTER THE STEAK FRY ATTENDED BY OVER 680 MEMBERS AND GUESTS.



CHARLES E. FINNEY, M.D., PRESIDENT OF MARICOPA COUNTY MEDICAL SOCIETY AND CHRISTOPHER A. GUARINO, M.D., PRESIDENT OF PIMA COUNTY MEDICAL SOCIETY.



THE DRUG ABUSE BREAKFAST WAS ONE OF THE BEST ATTENDED IN HISTORY. PANELISTS FROM LEFT TO RIGHT AT OR. PALMER, DR. DECKERT, DR. WINN, DR. DUNN AND DR. CROSBY.

OR. FINNEY SPEAKS ON FOUNOATIONS FOR MEOICAL CARE.



PRESIDENTS OF BLUE SHIELD, OR. GROBE, PAST ANO OR. GRIESS, NEW.



JULIAN DeVRIES, PAUL KOREN, M.O. ANO OR. GROBE SHARE A "FUNNY."





MRS. ALBERT G. WAGNER, CONVENTION CHAIRMAN AND MRS. FLOYD K. ANDERSON, NATIONAL DIRECTOR OF THE WOMAN'S AUXILIARY ADMIRE THE OUTSTANDING EXHIBIT.

BETSY LINCOLN POINTS OUT THEME AWARD BEST EXEMPLIFYING "100 YEARS IN SOUTHWEST" WON BY MRS. JOHN B. ALSEVER.





A HOBBY SHOW THAT TURNED INTO A FIRST CLASS ART SHOW THANKS TO MRS. KENDALL SAWREY, CHAIRMAN OF THIS WOMAN'S AUXILIARY EVENT THAT WAS TRULY A HIGHLIGHT OF THE MEETING

PESTICIDE POISONINGS IN ARIZONA

In December 1970, we mailed self-addressed postcard questionnaires to 2,029 Arizona physicians (1,669 M.D.'s; 360 D.O.'s) comprising all those listed with the respective state associations. The questionnaire inquired as to the number of pesticide poisonings attended by the physician in 1970. It also asked how many of these were hospitalized, how many were fatal, and how many represented either home accidents, suicides, or occupational poisonings.

A total of 1,171 cards (58%) were returned. These reported a total of 469 pesticide poisoning incidents attended by 148 physicians. Thus, the majority of such cases are seen by a small fraction (probably less than 10%) of physicians in the state.

A total of 125 hospitalizations were occasioned by pesticide intoxication. Tabulation by county and circumstances of poisoning is presented below:

POISONINGS BY PESTICIDES IN ARIZONA
1970

County	Home Accident	Occupational	Suicides	Other	Total
Apache	0	0	0	0	0
Cochise	4	0	0	0	4
Coconino	4	0	0	0	4
Gila	0	0	0	0	0
Graham	4	1	0	0	5
Greenlee	0	0	0	0	0
Maricopa	99	143	22	6	270
Mohave	2	0	0	0	2
Navajo	10	0	0	0	10
Pima	51	14	9	2	76
Pinal	13	41	1	1	56
Santa Cruz	2	1	1	0	4
Yavapai	0	1	0	0	1
Yuma	24	10	3	0	27
	213	211	36	9	469

Six fatalities were reported by physicians. Because of the special significance of this statistic, efforts were made to document these cases by death certificate and circumstantial data. One case was thus confirmed, a suicide by ingestion of malathion. One reported case was not confirmed by autopsy findings, and a second reported fatality actually occurred in 1968. The only other confirmable pesticide-related fatality in 1970 was not reported by the survey. This was an aerial applicator crash in which circumstantial and toxicologic data indicated that poisoning of the pilot may well have occurred, interfering with his ability to operate the aircraft.

Comparable surveys have been made in other states. In Iowa, 708 pesticide poisoning cases were reported in 1970.[1] South Carolina reported 572 cases in 1969.[2] Although these surveys did not break down the data by circumstances of poisoning, it is generally agreed that home accidents and occupational poisonings contribute most significantly, and about equally, to the total case burden.

† Epidemiologist and Director, respectively, of University of Arizona Comunity Studies Pesticide Project, supported by Contract FDA-70-14 with the Division of Community Studies, Environmental Protection Agency, Chamblee, Georgia.

[1] Personal communication.

[2] Keil, J. E., Sandifer, S. H., Gadsden, R. H., Pesticide Morbidity in South Carolina. The Journal of the South Carolina Medical Assn. 66(3):69; March 1970.

In Memoriam



WILLIAM B. PATTERSON, M.D.

On February 24, 1971 William B. Patterson, M.D., died in St. Luke's Hospital following his third heart attack at age 64.

Born in Bridgeport, Ohio, Pat graduated from the University of Pittsburgh Medical School in 1930 and served his Internship and Residency at McKeesport General Hospital. He spent the next several of these Depression years in a rugged Pennsylvania coal mining town as chief surgeon. His stories of these hard, violent and often exciting times were in many ways premonitory of the western stories which he was later to love and live.

After several years of quieter practice in Baden, Pennsylvania sinus trouble forced him to travel in search of a healthier climate which he finally found in Sonoita at the H. B. Thurber

ranch. A year in the Arizona sun, and hundreds of miles of horseback riding restored his health so that he was able to resume practice in Texas.

During these years in Fort Worth and later Lubbock he frequently interrupted his practice for prolonged periods of graduate study in his specialty of Obstetrics and Pediatrics. His total time spent at such institutions as Vanderbilt University, University of California, Cook County Post Graduate School, and Texas Children's Hospital would seem equivalent to current certification requirements.

Two years after his marriage to Helen, he came to Mesa in 1944, then a small town with few physicians. Here he practiced until health forced his retirement some eight months ago.

A man of firm convictions, Pat never hesitated to express them forcefully — usually good humoredly. None of his listeners could help but know of his firm belief in God, Country, and things western. An accomplished and knowledgeable horseman and a superb marksman, Pat found the Southside Sheriff's Possee an ideal outlet for additional service to his community.

Those of us who really knew him well remember Pat a true friend and competent humanitarian physician. Probably if Medicine had more physicians like Dr. Patterson, we would have far fewer of our present troubles.

To Helen and daughters Barbara and Caroline we convey our deepest sympathy.

George L Hoffman, M.D.

ArMA Reports

THE FOLLOWING IS THE RESUME OF THE MINUTES OF THE HOUSE OF DELEGATES MEETING HELD MAY 1, 1971 AT WHICH TIME FINAL ACTION WAS TAKEN ON THE VARIOUS RESOLUTIONS PUT BEFORE THE HOUSE BY THE MEMBERSHIP.

Adjourned meeting of the House of Delegates of The Arizona Medical Association, Inc., held in the Convention Center of the Safari Hotel, Scottsdale, Arizona, Saturday, May 1, 1971, convened at 8:15 A.M., Charles E. Henderson, M.D., Speaker of the House, presiding.

CREDENTIALS

The Credentials Committee reported a quorum present and the House duly constituted.

ROLL CALL

On the roll call, 78 Delegates (and/or Alternates) and 23 members of the Board of Directors were present.

MINUTES

Minutes of the meeting of the House of Delegates held April 25, 1970, were aproved without reading.

ELECTION OF OFFICERS

The following officers were elected for a term of one year:

President-Elect—John J. Standifer, M.D.
Vice President—Philip E. Dew, M.D.
Secretary—Edward Sattenspiel, M.D.
Treasurer—William C. Scott, M.D.
Speaker of the House—Charles E. Henderson, M.D.
Editor-in-Chief—John R. Green, M.D.

The following were elected for the term: 1/1/72-12/31/73

Delegate to AMA—Daniel T. Cloud, M.D.
Alternate Delegate to AMA—William B. Helm, M.D.

ELECTION OF DISTRICT DIRECTORS

The following District Directors were elected.

Central District—W. Scott Chisholm, Jr., M.D. (1971-1974)

Northeastern District (to fill unexpired term of Leo Lewis, M.D.) Richard B. Johns, M.D. (1971-1972)

Southeastern District—William W. McKinley, Jr., M.D. (1971-1974)

Southern District (to fill unexpired term of J. E. Brady, M.D.)—Everett W. Czerny, M.D. (1971-1972)

Southern District—George W. Nash, M.D. (1971-1974)

Southwestern District—Glenn H. Walker, M.D. (1971-1974)

REFERENCE COMMITTEE ON RESOLUTIONS

Report of the Reference Committee on Resolutions, as deleted, amended, or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Resolution Number 1-70

Subject: HIGHWAY DIRECTIONAL SIGNS FOR EMERGENCY MEDICAL FACILITIES

WHEREAS, Medical Societies (including the AMA), are urging the adoption of a Uniform Symbol and Highway Signs to be used on a national basis with the accepted purpose of identifying Emergency Medical Facilities; and

WHEREAS, With increasing numbers of highway accidents and the need for prompt care of the injured from those accidents, quick evacuation to proper medical facilities can be aided by uniform methods of identification of those facilities; therefore be it

RESOLVED, That the Arizona Medical Association hereby endorse the Highway Directional Signs for Emergency Medical Facilities recommended by the

Commission on Emergency Medical Services and the Council on Rural Health of the AMA; and be it further

RESOLVED, That the Arizona Medical Association urge the Arizona Highway Department and the various County Highway Departments within the State of Arizona to adopt these signs as standards for use on streets, roads and highways in our state; and be it further

RESOLVED, These signs must conform to international highway sign standards.

ADOPTED, AS AMENDED, May 1, 1971

Resolution Number 2-71

Subject: CONTINUING MEDICAL EDUCATION REQUIREMENTS

WHEREAS, The House of Delegates of the Arizona Medical Association, by adoption of substitute Resolution 9-70, has recognized that demonstrated participation by physicians in continuing education is becoming an expected part of the ongoing qualifications of physicians to practice their profession; and

WHEREAS, The House of Delegates of the Arizona Medical Association, by adoption of substitute Resolution 5-70, has stated that membership in the Arizona Medical Association should assure the public of physicians who continue to maintain their competency through continuing medical education; and

WHEREAS, The Ad Hoc Committee on Continuing Medical Education has been requested to prepare amendments to the bylaws providing for a Standing Committee on Continuing Medical Education; and

WHEREAS, The Ad Hoc Committee on Continuing Medical Education, as instructed by the House of Delegates through substitute Resolution 5-70, has extensively considered requirements for continuing medical education which are to be a **requisite** for continuing membership in the Arizona Medical Association; therefore, be it

RESOLVED, That each member of the Arizona Medical Association complete a minimum TOTAL of 150 credit hours of continuing medical education earned over a continuous three year qualifying period, and be required to submit a report of those educational activities to the Medical Education Committee of the Arizona Medical Association every three years.

A credit hour is on the basis of one hour of participation in a continuing medical education activity. A minimum of sixty credit hours must be obtained from any combination of **Required Education** categories (Categories 1 through 6). The remaining ninety credit hours may be acquired from any combination of **Elective Education** categories (Categories 7 through 10).

REQUIRED EDUCATION

Category 1. Internship-Residency (or Fellowship.) An AMA approved internship, residency, or fellowship is credited at fifty credit hours per year for full-time training.

Category 2. Education for an Advanced Degree.

Education leading to an advanced degree may be used for credit if the degree is in a medical field or a medically-related science such as medical care administration, legal medicine or immunology. Fifty credit hours are allowed for each full academic year of study within the qualifying period.

Category 3. Research in Lieu of Training.

Credit for medical research is given only for full-time medical research. Fifty credit hours are allowed for each full year of research.

Category 4. Continuing Medical Education Courses.

a. All courses produced by an AMA accredited institution, and until all institutions have had an opportunity to become accredited, courses offered by any organization or institution listed as a course sponsor or co-sponsor in "Continuing Education Courses for Physicians," Journal of American Medical Association, are creditable.
b. Medical School or Postgraduate Medical School Courses.
c. Annual AMA and ArMA Scientific Medical Meetings. (Only attendance at scientific sessions is creditable.)
d. National, Regional and State Scientific Medical Meetings of Specialty Societies and courses originated and directly presented by said Societies.
e. Individual ArMA approved courses or meetings.
f. Other ArMA approved education activities; e.g., sabbatical leave, postgraduate traineeship.

Catgory 5. Teaching

One credit hour is allow for each "clock" hour of teaching medical students or physicians. Maximum credit of 30 hours is allowable for a qualifying period.

An additional 60 credit hours may be claimed as elective hours in Category 10 (additional teaching).

Category 6. Paper or Publications.

Ten credit hours may be claimed for each scientific paper or publication. A paper must be presented to a medical society or an organization whose membership is restricted to physicians. A publication must appear in a recognized medical or medically related scientific journal. Scientific papers must have been presented or have been published during the qualifying period.

ELECTIVE EDUCATION

The remaining ninety credit hours needed to maintain membership in the Arizona Medical Association may be acquired from any combination of Elective Education Categories (Categories 7 through 10).

Category 7. Scientific Medical Meetings — Local.

A limit of fifty credit hours per qualifying period may be obtained in attending local scientific meetings such as hospital staff conferences, lectures, seminars, and local professional society meetings.

Category 8. Other Educational Activities.

Educational activities aproved in advance may be used with a fifty hour credit limit.

Category 9. Scientific Exhibits.

Ten credit hours are allowed for preparing and personally presenting a scientific exhibit at a professional meeting of a medical society or a medical specialty society.

Category 10. Additional Teaching.

Sixty credit hours may be claimed for teaching in this category in addition to the thirty credit hour limit in Category 5. The requirements for credit are the same as for Category 5.

; and be it further

RESOLVED, That all **active members** of the Arizona Medical Association as of July 1, 1971 must submit their initial report of continuing medical education activities to the Medical Eduaction Committee no later than June 30, 1974 and every three years thereafter in order to maintain their active membership. Required reports of continuing medical education activities may be submitted to the Medical Education Committee for validation beginning July 1, 1972 and every three years thereafter by members of the Association if they so desire; and be it further.

RESOLVED, That new active members of the Arizona Medical Association subsequent to July 1, 1971 will be given a qualifying period of three years from July 1, of the year their active membership commenced, to fulfill the requirements of continuing medical education; and be it further

RESOLVED, That consideration be given those members who receive reasonably equivalent awards and/or certificates of continuing medical education from the American Medical Association or recognized national professional societies, as satisfying the requirements for continuing medical education of the Arizona Medical Association; and be it further

RESOLVED, That the Medical Education Committee will report anually to the Board of Directors of the Arizona Medical Association names of those members who have submitted acceptable reports of three years of continuing medical education activities. Those members will then be sent appropriate certificates of commendation by the Board of Directors; and be it further

RESOLVED, That the Medical Education Committee will report annually to the Grievance Committee those members who have failed to submit a report of continuing medical education activities as required, or who have submitted an unsatisfactory report. The Grievance Committee shall serve as an Appeal Board in these matters and make recommendations to the Board of Directors that:

(a) There is sufficient reason for a member not to participate in the Continuing Medical Education Program for reasons of ill health, handicap, temporary absence from practice, or other extenuating circumstance,

(b) The report submitted is satisfactory and acceptable or

(c) A member be suspended or expelled according to the procedure outlined in Chapter VII, Section 4, (d).

ADOPTED, May 1, 1971

Resolution Number 3-71

Subject: 1972 CALENDAR YEAR BUDGET OF INCOME AND EXPENDITURES

WHEREAS, It is customary for the House of Delegates to approve the Budget of Income and Expenditures for next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1972, be adopted as follows:

INCOME:

400	**GENERAL FUND**		$192,045.00
401	Association Dues — Active Members	$185,130.00	
401a	Association Dues— Service Members	600.00	
402	Sale of Supplies	—0—	
403	AMA commissions	600.00	
404	Interest Income	500.00	
405	Miscellaneous	15.00	
406	BOMEX Rental	5,200.00	
420	**PUBLISHING COMMITTEE**		$ 48,840.00
421	Advertising	$ 30,000.00	
422	Subscriptions, Nonmember	500.00	
423	Reprints	1,500.00	
424	Other	10.00	
425	Subscriptions, Members	16,830.00	
430	**ANNUAL MEETING**		$ 30,000.00
430	Total Income	$ 30,000.00	
	TOTAL ANTICIPATED 1972 INCOME		$270,885.00

EXPENDITURES:

500	**GENERAL FUND**		$149,350.00
501	Salaries	$ 71,900.00	
501A	R.C. Retirement	6,000.00	
502	Payroll Taxes	3,800.00	
503	Meeting Expense	7,000.00	
504	Travel	5,000.00	
505	Building Operation	8,000.00	
506	Telephone & Telegraph	6,000.00	
507	Printing	3,000.00	
509	Supplies	8,000.00	
511	Dues & Contributions	2,000.00	
512	Legal—Nonlegislative	5,000.00	
513	Insurance	9,000.00	
514	Equipment Maintenance & Rental	3,100.00	
515	AMA Refunds	1,000.00	
516	Postage	5,000.00	
517	Miscellaneous	100.00	
518	Blue Cross-Blue Shield	3,000.00	
519	Interest Expense	1,500.00	
520	Contractual Services	150.00	
521	Audit	2,000.00	
522	General Overhead Recovery	(4,000.00)	
524	Furniture and Fixtures	2,800.00	
	TOTAL GENERAL FUND EXPENDITURES		$149,350.00

DIRECT COMMITTEE EXPENDITURES

500a	Annual Meeting	$ 30,000.00	
500b	Articles of Incorp. & Bylaws	50.00	

500c	Benovelent & Loan Fund	
	Meeting Expenses	200.00
	Scholarship Grants	2,500.00
500d	Board of Directors	1,500.00
500e	Professional Liability Legislation	500.00
500f	Executive	100.00
500h	Grievance	50.00
500i	History & Obituaries	50.00
500k	Legislative-Legal	4,000.00
	-Other	4,000.00
500l	Medical Economics	200.00
500n	Locum Tenens & Health Manpower	1,000.00
500o	Continuing Medical Education	2,000.00
500p	Professional	2,500.00
500q	Finance	100.00
500r	Public Relations	15,000.00
500s	Publishing	50,410.00
500t	Scientific Assembly	200.00
500u	Woman's Auxiliary	1,000.00
500w	Procurement & Assignment	10.00
500y	Governmental Services	3,000.00

TOTAL COMMITTEE Expenditures	$118,370.00
TOTAL EXPENDITURES	$267,720.00
CONTINGENCY FUND	$ 3,165.00

and be it further

RESOLVED, That the Annual Dues of the Arizona Medical Association, Inc., be continued at $120.00 for Active members with $110.00 going to the General Fund and $10 going to the ARIZONA MEDICINE budget; and be it further

RESOLVED, That the Service member dues by $30.00 with $20.00 going to the General Fund and $10.00 going to the ARIZONA MEDICINE budget.

ADOPTED, May 1, 1971

Resolution Number 4-71

Subject: A DEPARTMENT OF FAMILY PRACTICE

WHEREAS, There is a growing public concern over matters related to health, and the availability of health care services; and

WHEREAS, The family physician has been and should continue to be best qualified to provide access to comprehensive health care; and

WHEREAS, The American Board of Family Practice is now recognized by the AMA as a new and accepted specialty board; and

WHEREAS, Since this is a new specialty it now rates a status of a full department in medical school; and

WHEREAS, There is a disturbing shortage of family physicians in the State of Arizona and in the nation; and

WHEREAS, Fewer graduating doctors of medicine are entering family practice because they are not aware of the opportunities and rewards available to family physicians; and

WHEREAS, The College of Medicine of the University of Arizona should prepare an adequate number of its students to meet these public needs for more primary physicians; therefore be it

RESOLVED, In order to accomplish these ends and make a Family Practice Program more attractive, effective and productive, we recommend the early and continual exposure of medical students to the concept of Family Practice; and be it further

RESOLVED, That the Arizona Medical Association here assembled does go on record recommending increasing emphasis on Family Practice at the University of Arizona College of Medicine, ultimately leading to the establishment of a full department of Family Practice, the Chairman of which shall be a physician with sufficient experience in active family practice to teach the management of comprehensive family health care; and be it further

RESOLVED, That a copy of this Resolution be sent to the Board of Regents of the State of Arizona and the Dean of the College of Medicine of the University of Arizona for appropriate action.

ADOPTED, AS AMENDED, May 1, 1971

Resolution Number 5-71

Subject: CURRENT PROCEDURAL TERMINOLOGY

WHEREAS, The need for a uniform system of coding and nomenclature in order to describe accurately the great variety of medical services has never been greater; and

WHEREAS, The American Medical Association has prepared an accurate and current system of coding and nomenclature; and

WHEREAS, State medical associations, specialty societies, and others have delayed their own efforts so as to be certain there would be one universal system of description of professional services; therefore be it

RESOLVED, That this House support the system of coding and nomenclature of the American Medical Association; and be it further

RESOLVED, That the Arizona Medical Association's House of Delegates urge Arizona Blue Shield to adopt the American Medical Association's system of coding and nomenclature as the universal system for description of medical services.

ADOPTED, May 1, 1971

Resolution Number 6-71

Subject: BLUE SHIELD PLANS TO BID ON FOUNDATION SPONSORED INSURANCE PLANS

WHEREAS, There are many parties introducing innovations in the area of delivery of health care; and

WHEREAS, The majority of physicians in Arizona believe in the Foundation approach as a means of improving quality of health care and reducing health costs; and

WHEREAS, Foundations have been established in Maricopa County and Pima County to accomplish these goals; and

WHEREAS, Blue Shield is also a plan supported by the physicians of Arizona; now therefore be it

RESOLVED, That the Executive Director and Board of Directors of Blue Shield be instructed to bid on Foundation Plans being sponsored by Pima Foundation for Medical Care and Maricopa Foundation for

Medical Care, and any future foundations established in Arizona.

NO ACTION — REFERRED TO ARIZONA BLUE SHIELD CORPORATE BODY

Resolution Number 7-71

Subject: AMERIPLAN

WHEREAS, There are numerous proposals being introduced into Congress to provide health care for all people; and

WHEREAS, The American Medical Association has introduced its Medicredit Plan, which the Arizona Medical Association supports; and

WHEREAS, The American Hospital Association is proposing its AMERIPLAN as an alternative approach; and

WHEREAS, The Arizona Medical Association has thoughtfully considered the AMERIPLAN, and believes it to contain features that would further dissipate the health care dollar and thereby compromise the objective of providing good health care to all people; now therefore be it

RESOLVED, That the Arizona Medical Association reaffirms its support of the AMA Medicredit Plan, and be it further

RESOLVED, That the Arizona Medical Association not endorse AMERIPLAN in its present form, and be it further

RESOLVED, That this expression be sent to the Congressmen and Senators of the State of Arizona and in the Congress of the United States.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, May 1, 1971

Resolution Number 8-71

Subject: Part B. INTERMEDIARY LETTER NO. 70-32 DATED NOVEMBER, 1970.

WHEREAS, Part B Intermediary Letter No. 70-32 dated November, 1970 resulted in Aetna Life and Casualty's (Part B Intermediary for Arizona) distribution of Release No. 39 dated January 29, 1971 which reads as follows:

"NURSING HOME VISITS

New regulations require carriers to assume that a visit by a physician to a nursing home involves services to several patients. In applying this concept, a lower charge will generally be allowed unless the billing form clearly indicates that only one patient was seen. Whenever services are rendered to only one patient in a nursing home, it is recommended that the phrase 'only patient seen' be used on the billing form, or in item 7C of Medicare Claim Form 1490. This will assure an equitable reasonable charge determination. Failure to supply this information will result in a lower claim payment."; and

WHEREAS, This regulation appears to be aimed at controlling a small number of physicians; and

WHEREAS, Its broad application creates hardships on all physicians caring for patients in nursing homes; therefore be it

RESOLVED, That this Association urge Thomas M. Tierney, Director, Bureau of Health Insurance (author of this regulation) to rescind Part B Intermediary Letter N. 70-32; and be it further

RESOLVED, That the Bureau of Health Insurance utilize existing peer review mechanisms for controlling those few physicians who are suspected of over-utilizing the medicare program; and be it further

RESOLVED, That this resolution be brought to the attention of the American Medical Associaiton with the request that that organization assist us in rescinding Part B Intermediary Letter No. 70-32.

ADOPTED, May 1, 1971

Resolution Number 9-71

Subject: Social Security Amendments Relating to Peer Review

WHEREAS, It appears that Congress will very likely enact, as part of the Social Security Administration Amendments of 1971, legislation dealing with peer review; and

WHEREAS, Such legislation will likely follow along the lines of Senator Bennett's Professional Standards Review Organizations Amendment 851 to H.R. 17550 introduced in 1970; and

WHEREAS, If such legislation becomes law, it is vital that the medical profession provide leadership and direction; therefore be it

RESOLVED, That the Arizona Medical Association, through its Board of Directors and staff, create an umbrella organization for the purpose of handling any peer review program that may be dictated by the Social Security Administration Amendments; and be it further

RESOLVED, That such organization utilize, as best as possible, existing peer review structures within the state; and be it further

RESOLVED, That such organization be made cognizant of the Association's position on utilization review as outlined in the position paper on the subject adopted by the Board of Directors at their January 31, 1971 meeting.

ADOPTED, MAY 1, 1971

Resolution Number 10-71

Subject: MEDICAL EDUCATION COMMUNITY ORIENTATION

WHEREAS, The physicians of Arizona have demonstrated a continuing interest in the College of Medicine, University of Arizona, and its student body; and

WHEREAS, The student body, especially the Freshmen and Sophomores, have expressed an interest in the nonacademic aspect of medical care; and

WHEREAS, The Arizona Chapter of SAMA has asked support in establishing a summer work program in hospitals, clinics and large medical groups; therefore be it

RESOLVED, That this be referred to the Professional Committee's Section on Allied Medical Groups for Study.

ADOPTED, AS AMENDED, MAY 1, 1971

Introduced by: Kent E. Durfee, M.D.

Resolution Number 11-71

Subject: Pollution Control

WHEREAS, The pollution of our air, land and water is an ever-increasing problem in our country, and

WHEREAS, If man is to survive he must assume the responsibility for maintaining a clean environment, and

WHEREAS, The Arizona Medical Association recog-

nizes that the increasing contamination threatens the health and well-being of all our communities, therefore be it

RESOLVED, That the Arizona Medical Association instruct the existing sub-committee of the Professional Committee on Water and Air Pollution to actively promote such measures as will lead to a cleaner, healthier environment; that this committee be prepared to work with other established agencies toward this end; and be it further

RESOLVED, That the Arizona Medical Association, through the Bylaws Committee, consider the establishment of a standing committee on Pollution Control to be presented to the next Annual Meeting; and be it further

RESOLVED, That the county societies be urged to establish committees to work actively on Pollution Control at the local level.

ADOPTED AS AMENDED, MAY 1, 1971

REFERENCE COMMITTEE ON AMENDMENTS

Report of the Reference Committee on Amendments, as deleted, amended, or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Resolution Number A-1-71

Subject: CHAPTER II — MEMBERSHIP — SECTION 3. CLASS OF MEMBERSHIP — (A) ACTIVE MEMBERS — AMENDMENTS

RESOLVED, That Chapter II — Membership — Section 3. Class of Membership — (A) Active Members — Amendments, be amended to read:

All active members of all the county societies shall be active members of this Association. The minimum qualifications for active membership in a county society shall be that the individual must (1) hold the degree of Doctor of Medicine or its equivalent, (2) be an American citizen, or have made application for American citizenship papers (in which case, he must make reasonable progress toward full citizenship or his membership shall lapse), (3) hold an unrevoked license to practice medicine and surgery in the State of Arizona, and (4) be a legal resident of the State of Arizona, (5) FULFILL THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION. Subject to these minimum qualifications and to the provisions for loss of membership (Chapter II, Section 4), each county society shall be the exclusive judge of the qualifications of its members.

Rights. An active member shall have all the rights and privileges of the Association as herein provided.

ADOPTED, MAY 1, 1971

Resolution Number A-2-71

Subject: CHAPTER II — SECTION 4. LOSS OF MEMBERSHIP (A), (B) — AMENDMENTS

RESOLVED, That Chapter II — Section 4. Loss of Membership (A) — Amendments, be amended to read:

(A) Active, Associate or Fifty-Year Club membership in this Association shall be lost by:

(i) Final expulsion from the county society through which he is an active member of the Association.

(ii) Transfer of membership to a county society of another state, and thereby to another state Association, except as provided in Chapter III, Section 3.

(iii) Voluntary resignation, which shall be without prejudice.

(iv) Action of the House of Delegates (see Chapter VI, Section 6; Chapter VIII, Section 9).

(v) Revocation of the member's license to practice in Arizona. This latter clause shall effect immediate loss of membership as of the date of revocation.

(vi) Failure to maintain membership in good standing in the American Medical Association.

(vii) Failure to pay Association dues and assessments within one year of the date such become payable, unless such failure be exempted under Chapter IX, Section 5.

(viii) FOR ACTIVE MEMBERSHIP, FAILURE TO FULFILL THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION ELSEWHERE IN THE BYLAWS.

(B) Active, Associate or Fifty-Year Club membership in this Association shall be suspended by:

(i) Suspension of membership in the county society through which he is an active member of this Association.

(ii) Action of the Board (see Chapter VI, Section 6).

(iii) Suspension of membership in the American Medical Association, or

(iv) Failure to pay the annual dues and assessments before the delinquency date.

(v) FOR ACTIVE MEMBERSHIP, FAILURE TO SUBMIT SATISFACTORY REPORTS SHOWING COMPLIANCE WITH THE CONTINUING MEDICAL EDUCATION REQUIREMENTS OF THE ARIZONA MEDICAL ASSOCIATION.

All of the rights and privileges of membership shall be withheld during the period of suspension of membership.

ADOPTED, MAY 1, 1971

Resolution Number A-3-71

Subject: CHAPTER IV — OFFICERS. SECTION 7. TREASURER — AMENDMENTS

RESOLVED, That Chapter IV — Officers. Section 7. Treasurer be amended to read:

The treasurer is the chief financial officer of the Association AND CHAIRMAN OF THE FINANCE COMMITTEE. Aside from such specific duties as may be otherwise herein provided, HE SHALL BE RESPONSIBLE FOR AND SHALL PREPARE THE ANNUAL BUDGET. TO ASSIST HIM IN THIS FUNCTION HE SHALL SOLICIT THE ADVICE AND ASSISTANCE OF THE FINANCE COMMITTEE, receive and hold all funds of the Association, and disperse the same upon proper authorization and approval.

He shall order an annual certified audit of the accounts of the Association by a Certified Public Accountant of good repute, and shall have authority Certified Public Accountant for services rendered. This audit shall serve as a basis for an annual report to the Board and to the House of his expenditures and the state of the funds in his hands.

ADOPTED, AS AMENDED, MAY 1, 1971

Resolution Number A-4-71

Subject: CHAPTER VII — STANDING & SPECIAL COMMITTEES — SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: — AMENDMENT

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (c) be added to read:

(C) FINANCE: — THE COMMITTEE SHALL CONSIST OF THE TREASURER AS CHAIRMAN AND AT LEAST THREE MEMBERS. THE COMMITTEE SHALL ACT IN AN ADVISORY CAPACITY IN BUDGETARY AND FINANCIAL MATTERS.

ADOPTED, MAY 1, 1971

Resolution Number A-5-71

Subject: CHAPTER VII — STANDING & SPECIAL COMMITTEES — SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: — AMENDMENT

RESOLVED, That Chapter VII — Standing Committees. Section 4 (f) be deleted:

ADOPTED, MAY 1, 1971

Resolution Number A-6-71

Subject: CHAPTER VII — STANDING & SPECIAL COMMITTEES — SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: — AMENDMENT

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (h) Medical Economics: be amended to read:

(h) Medical Economics: — This Committee shall consist of A CHAIRMAN AND at least six members appointed on a geographic basis and with due consideration of the specialties and general practice. This committee shall deal with matters affecting the economic status of doctors of medicine. Sections will be set up within the committee and these may be enlaged as necessary.

The purview of this committee shall include:

(1) Governmental Contracts; EXCEPT THOSE MATTERS DEALING WITH WORKMEN'S COMPENSATION;

(2) Health and Accident Insurance, Office Expense Insurance and Group Liability Insurance;

(3) Organized Welfare and Charity Work;

(4) Retirement and Investments, including Group Investments for members.

ADOPTED, MAY 1, 1971

Resolution Number A-7-71 and A-8-71

Subject: CHAPTER VII — STANDING & SPECIAL COMMITTEES — SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: — AMENDMENT

RESOLVED, That Chapter VII — Standing and Special Committees — Section 4 (i) Profcssional: — be amended to read:

(i) Professional: — This committee shall consist of a chairman and at least ten members. A chairman shall be appointed annually from among the members who have served for at least threc years on the committee.

The committee will be responsible for all professional aspects of medicine, other than the economic and legislative arcas, and comprise scctions on Aging and General Medicine (cancer, diabetes, arthritis, alcoholism, deafncss, visually handicapped, blood and nursing homes); Allied medical groups (allied and paramedical professions and groups); Athletic medicine; Disaster medicine; DRUG ABUSE; Emergency Care; Medicine and Religion; Mental health; Perinatal and Maternal mortality Poison control; Public health (Maternal and child health, water and air pollution; nursing homes and venereal disease); REHABILITATION MEDICINE: Safety and such other sections as may be indicated from time to time. It shall interest itself in medico-legal problems. Further, an advisor to the Woman's Auxiliary of ArMA shall be designated (to be chosen from the same geographic area of the state as the current President of the Woman's Auxiliary).

Each committee member, except the chairman, shall serve as chairman of a section for a particular activity. The chairman may also serve as the chairman of a section. The section chairman shall be appointed by the President of the Association, with advice of the chairman of the Professional Committee.

ADOPTED, MAY 1, 1971

Resolution Number A-9-71

Subject: CHAPTER VII — STANDING & SPECIAL COMMITTEES — SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: — AMENDMENTS

RESOLVED, That Chapter VII — Standing & Special Committees — Section 4. (i) be amended to read:

(I) OCCUPATIONAL HEALTH: — THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST FIVE MEMBERS APPOINTED ON A GEOGRAPHIC BASIS AND WITH DUE CONSIDERATION FOR THE SPECIALTIES AND FAMILY PRACTICE. THE COMMITTEE SHALL REPRESENT THE ASSOCIATION ON ALL QUESTIONS RELATING TO MEDICAL AND ECONOMIC RELATIONS UNDER WORKMEN'S COMPENSATION.

IT SHALL ALSO CONCERN ITSELF WITH IMPROVEMENT IN INDUSTRIAL SAFETY AND THE MAINTENANCE OF GOOD INDUSTRIAL H E A L T H [REHABILITATION] PRACTICES.

ADOPTED, AS AMENDED, MAY 1, 1971

Resolution Number A-10-71

Subject: CHAPTER VII — STANDING AND SPECIAL

COMMITTEES – SECTION 4. COMPOSITION AND DUTIES OF STANDING COMMITTEES: – AMENDMENTS

RESOLVED, That Chapter VII Standing and Special Committees – Section 4 (i) be amended to read:

(I) MEDICAL EDUCATION: – THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST EIGHT MEMBERS, APPOINTED WITH DUE CONSIDERATION FOR THE SPECIALTIES, FAMILY PRACTICE AND GEOGRAPHIC DISTRIBUTION OF PHYSICIANS, AN EX-OFFICIO MEMBER OF THE COMMITTEE SHALL BE A FACULTY MEMBER OF THE COLLEGE OF MEDICINE OF THE UNIVERSITY OF ARIZONA, AND SHOULD BE INVOLVED IN CONTINUING MEDICAL EDUCATION. A CHAIRMAN SHALL BE APPOINTED ANNUALLY FROM AMONG THE MEMBERS WHO HAVE SERVED FOR AT LEAST TWO YEARS ON THIS COMMITTEE OR ITS PREDECESSOR COMMITTEE. THE COMMITTEE SHALL REPRESENT THE ASSOCIATION ON ALL QUESTIONS RELATING TO MEDICAL EDUCATION AT ALL LEVELS, AND THE COLLEGE OF MEDICINE OF THE UNIVERSITY OF ARIZONA, AND RECOMMEND FOR CERTIFICATION TO THE BOARD OF DIRECTORS THOSE MEMBERS WHO HAVE COMPLETED THE MEDICAL EDUCATION REQUIREMENTS FOR CONTINUING MEMBERSHIP AS SET FORTH IN CHAPTER II, SECTION 3 (A), (5).

ADOPTED, AS AMENDED, MAY 1, 1971

Resolution Number A-11-71

Subject: MANDATORY AMERICAN MEDICAL ASSOCIATION MEMBERSHIP REQUIREMENTS OF THE PRESENT ARIZONA MEDICAL ASSOCIATION, INC., BYLAWS.

WHEREAS, The present Arizona Medical Association Bylaws require that each active county society member must be an active member of the Arizona Medical Association; and

WHEREAS, Each active member of the Arizona Medical Association is required by those same Bylaws to be an active member of the American Medical Association; and

WHEREAS, A number of qualified physicians have not joined county societies because of mandatory membership policies, particularly in regard to the American Medical Association; and

WHEREAS, Involuntary membership policies are basically contrary to democratic principles and procedures; and

WHEREAS, Such involuntary membership policies leave organized medicine vulnerable to public criticism as to the true representative nature of their organizations; and

WHEREAS, Support of the American Medical Association is not incompatible with support of voluntary membership policies; and

WHEREAS, Only ten state medical societies presently have mandatory American Medical Association membership requirements, the states of New York, Montana, and Nevada having eliminated such requirements last year; therefore be it

RESOLVED, That the following amendments to the Arizona Medical Association Bylaws, which would eliminate the mandatory American Medical Association membership requirements, be adopted. All bracketed [] words represent deletions; all fully capitalized words represent new material:

Chapter II, Section 1. General Requirements: An active member in good standing of a county society is automatically an active member of this Association, and, conversely, an active member in good standing of this Association must be an active member of a county society.

Any person, when he becomes a member, shall agree to abide by the Articles of Incorporation and Bylaws of this Association, and by any lawful changes which from time to time may be made.

He further agrees to abide by the Code of Ethics as laid down by the American Medical Association as it now exists, or may hereafter be amended, [and, be a member of that association].

Chapter II, Section 4. Loss of Membership. (A) Active, Associate or Fifty-Year Club membership in this Association shall be lost by: [(vi) Failure to maintain membership in good standing in the American Medical Association.]

Chapter II, Section 4. Loss of Membership. (B) Active, Associate or Fifty-Year Club membership in this Association shall be suspended by: [(iii) Suspension of membership in the American Medical Association.] Chapter IX. Dues and Assessments. Section 1. Fixing of Annual Dues; Payments; Reinstatements; Collections; Enforcement (b) The annual dues and the dues and assessments of the American Medical Association (OPTIONAL FOR THE AMERICAN MEDICAL ASSOCIATION) shall be payable January first of the year for which levied and shall be delinquent after February fifteenth of the year. Members suspended for failure to pay the annual dues and assessments cannot be reinstated until such indebtedness has been discharged. Such indebtedness shall apply only to the last year of delinquency, but then only as a new member on election and acceptance by the County Medical Society. The secretary of each county society shall collect and forward to the Association Secretary, the dues for its members, together with the dues and assessments levied by the American Medical Association (OPTIONAL FOR THE AMERICAN MEDICAL ASSOCIATION). (c) Any member whose dues for the current year, [or whose dues and assessments for the American Medical Association,] have not been remitted to the Association Secretary on or before February fifteenth, shall stand suspended until such delinquency is corrected.

NOT ADOPTED, MAY 1, 1971

MEETING ADJOURNED SINE DIE AT 9:45 A.M.

Edward Sattenspiel, M.D.
Secretary

Future Medical Meetings

COCONINO COUNTY MEDICAL SOCIETY

Announces

SUMMER MEDICAL SEMINAR

July 31, and August 1, 1971

With members of the University of Arizona College of Medicine, at Coconino County Health Department Auditorium, North Fort Valley Rd., Flagstaff, Arizona, will coincide with the Flagstaff Summer Festival.

— $20.00 registration fee —

For additional information, contact Coconino County Medical Society, 1355 N. Beaver, Flagstaff, Ariz. 86001.

NATIONAL CONFERENCE ON MEDICAL MALPRACTICE AND DOCTOR-LAWYER RELATIONSHIPS

Sponsored by Continuing Education of the Bar and the Medical-Legal Society of Southern California — July 31 & August 1 — in Los Angeles.

For further information write: California Continuing Education of the Bar, 2150 Shattuck Ave., Berkeley, Calif. 95705 or call Mick Niccum (415) 642-6378. In Los Angeles call, Mrs. Jean Rearden (213) 825-5301.

REFRESHER COURSE IN CARDIOLOGY AND ELECTROCARDIOGRAPHIC PROBLEMS

August 2 through 5, 1971

GUADALAJARA HILTON HOTEL
Guadalajara, Jalisco, Mexico

For additional information contact: Medical Society of the United States and Mexico, Executive Secy., Mrs. Virginia E. Bryant, 333 W. Thomas Rd., Suite #207, Phoenix 85013.

OCCUPATIONAL HEALTH CONGRESS

The 31st Annual AMA Congress on Occupational will be held at Jackson Lake Lodge in Grand Teton National Park, Wyoming — Aug. 29-30.

For additional information contact: Louis A. Skiera, Asst. Director, Division of Scientific Activities, Dept. of Environmental, Public, & Occupation Health, AMA, 535 N. Dearborn St., Chicago, Illinois 60610.

PHONOCARDIOGRAPHY PULSE TRACING- VECTORCARDIOGRAPHY A WORKSHOP

September 27-30, 1971

This is an intensive four-day program covering in detail the field of phonocardiography and pulse tracings and vectorcardiography.

Mountain Shadows Resort Hotel
Scottsdale, Arizona

For additional information contact: Mr. William Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Betheda, Maryland 20014.

Directory

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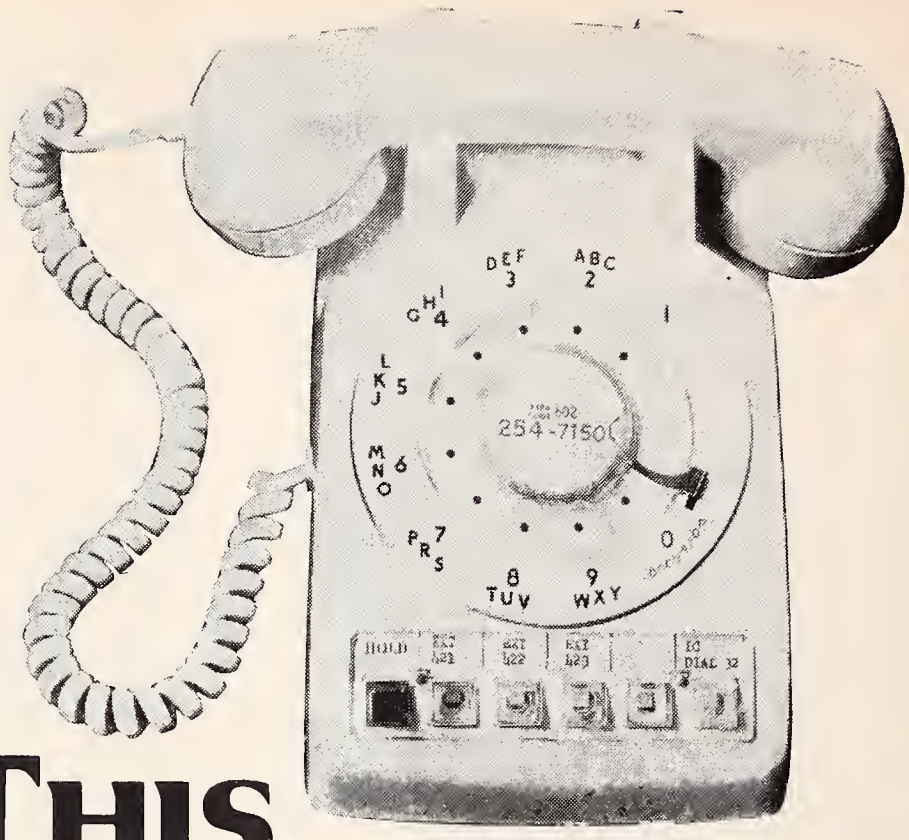
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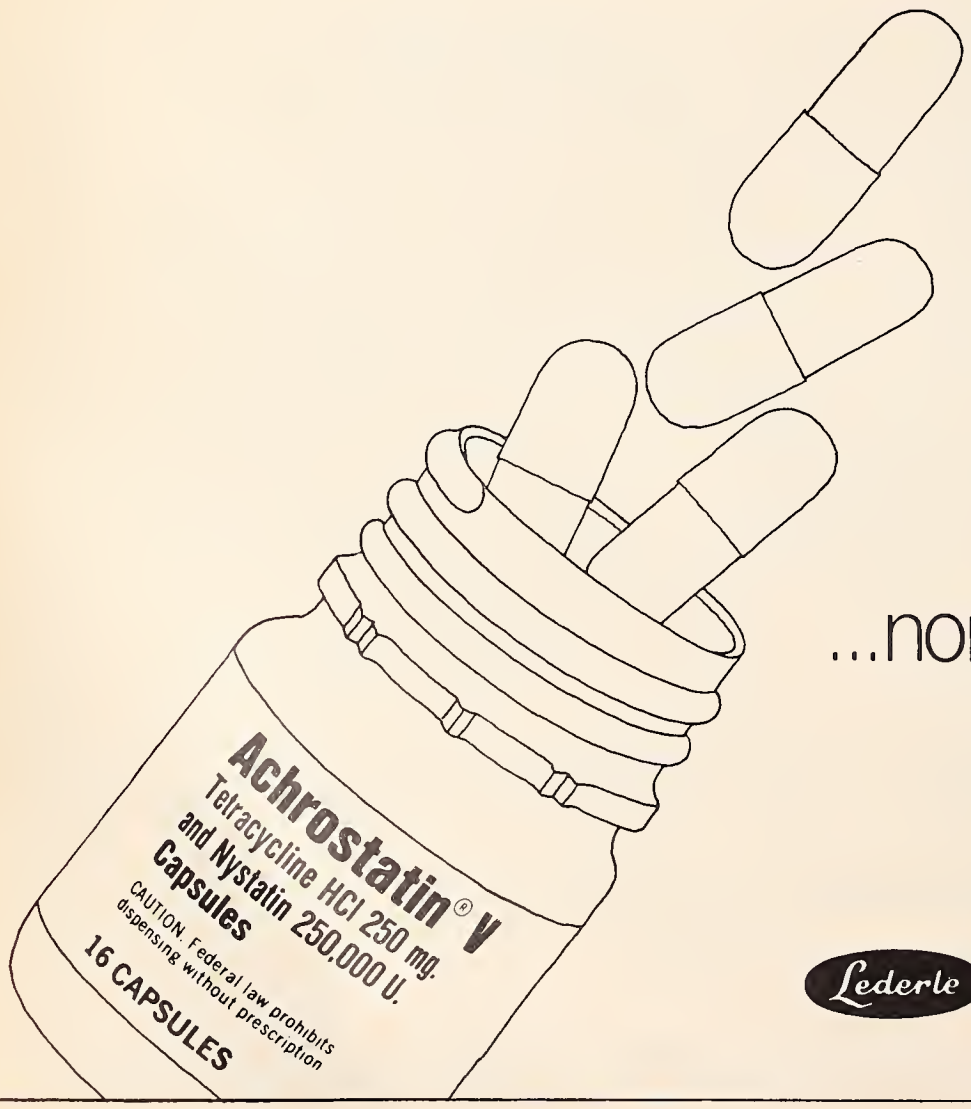
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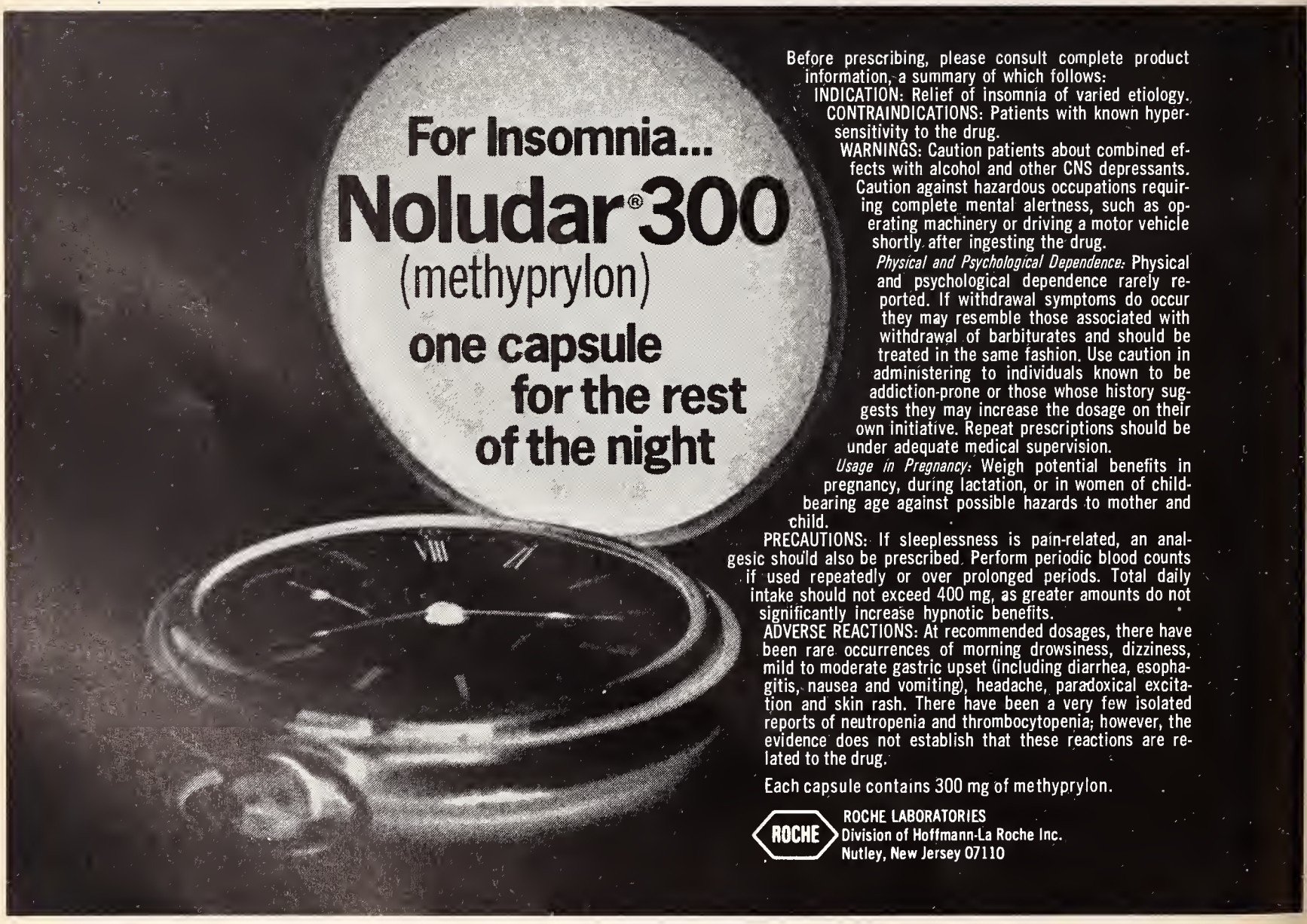
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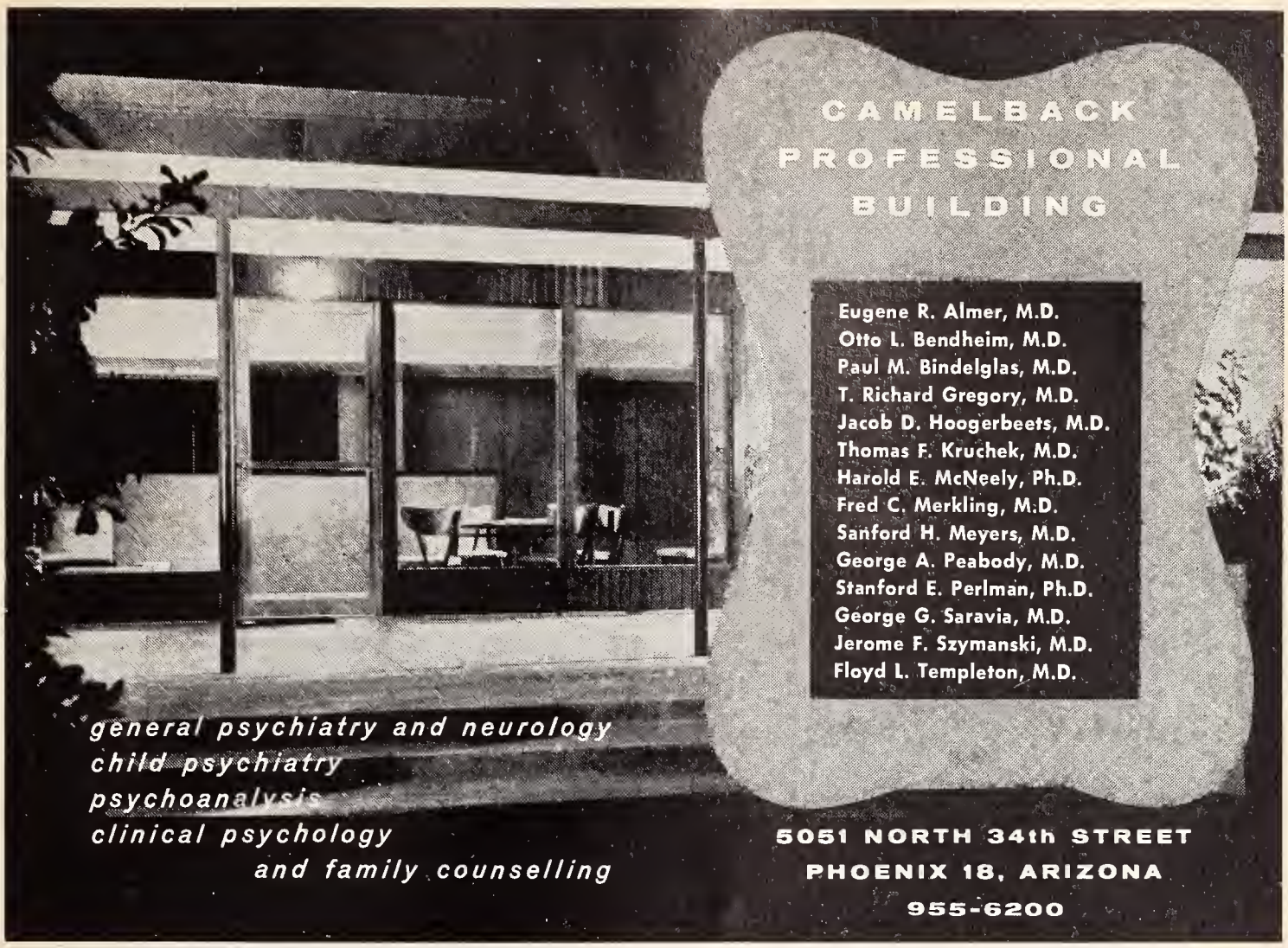
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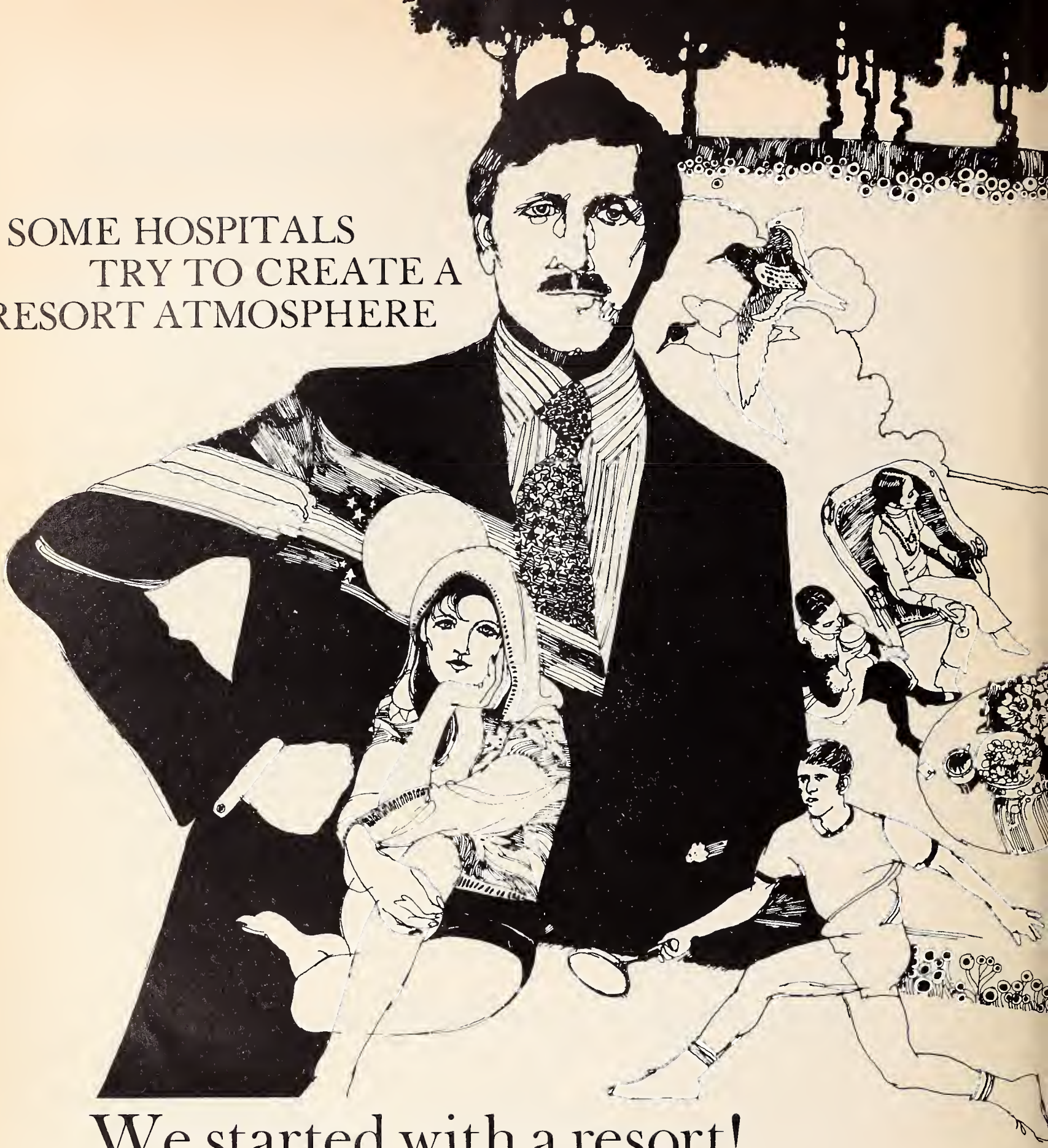
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(when her husband's at fault)



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